

# TECHNOLOGY

## REVIEW *March* 1953



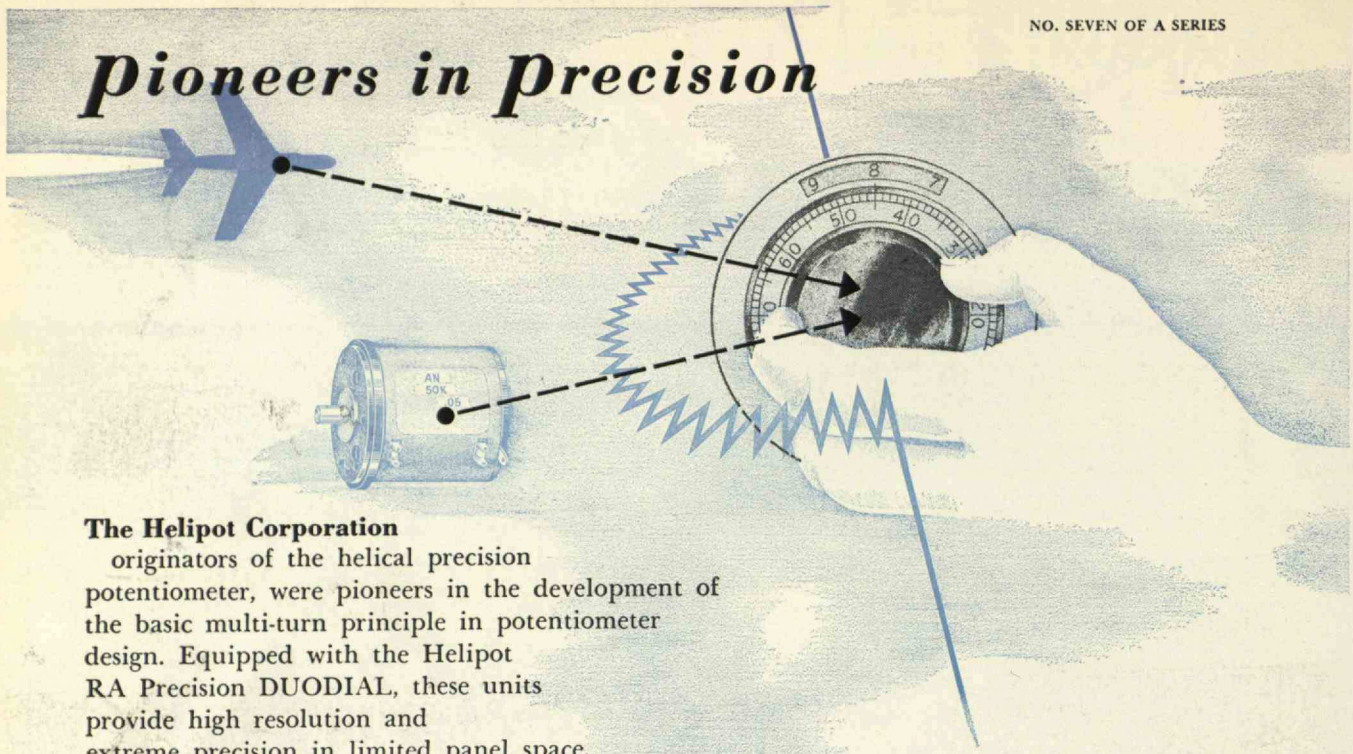
# technology review

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# Pioneers in Precision



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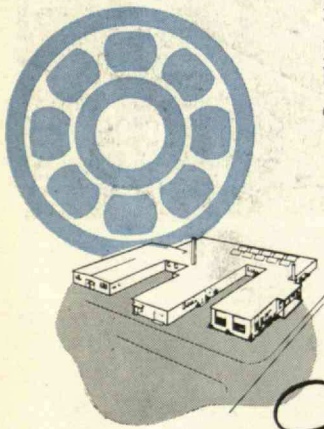
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are the extra quality products manufactured by the originators and pioneer developers of ball bearings in miniature precision sizes. More than three thousand discriminating customers are currently being supplied with **MPB** components for applications involving high fidelity performance.

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**MPB** ball bearings are fully ground, lapped, and/or honed to ABEC 5 tolerances or better. They are torque tested, ultrasonically cleaned, supplied in specific tolerances and classified within the tolerances for prompt assembly and maximum service. **MPB** ball bearings are normally supplied in 10 series, from 1/10" to 5/16" o.d., of high carbon chrome bearing steel. Some are supplied in stainless and beryllium copper, and all are assembled with best quality balls. The most extensive engineering knowledge in miniature bearing applications is available to you. Write for Catalog and survey sheet TR3

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# Roast beef in a push-button age

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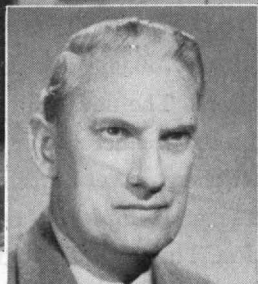
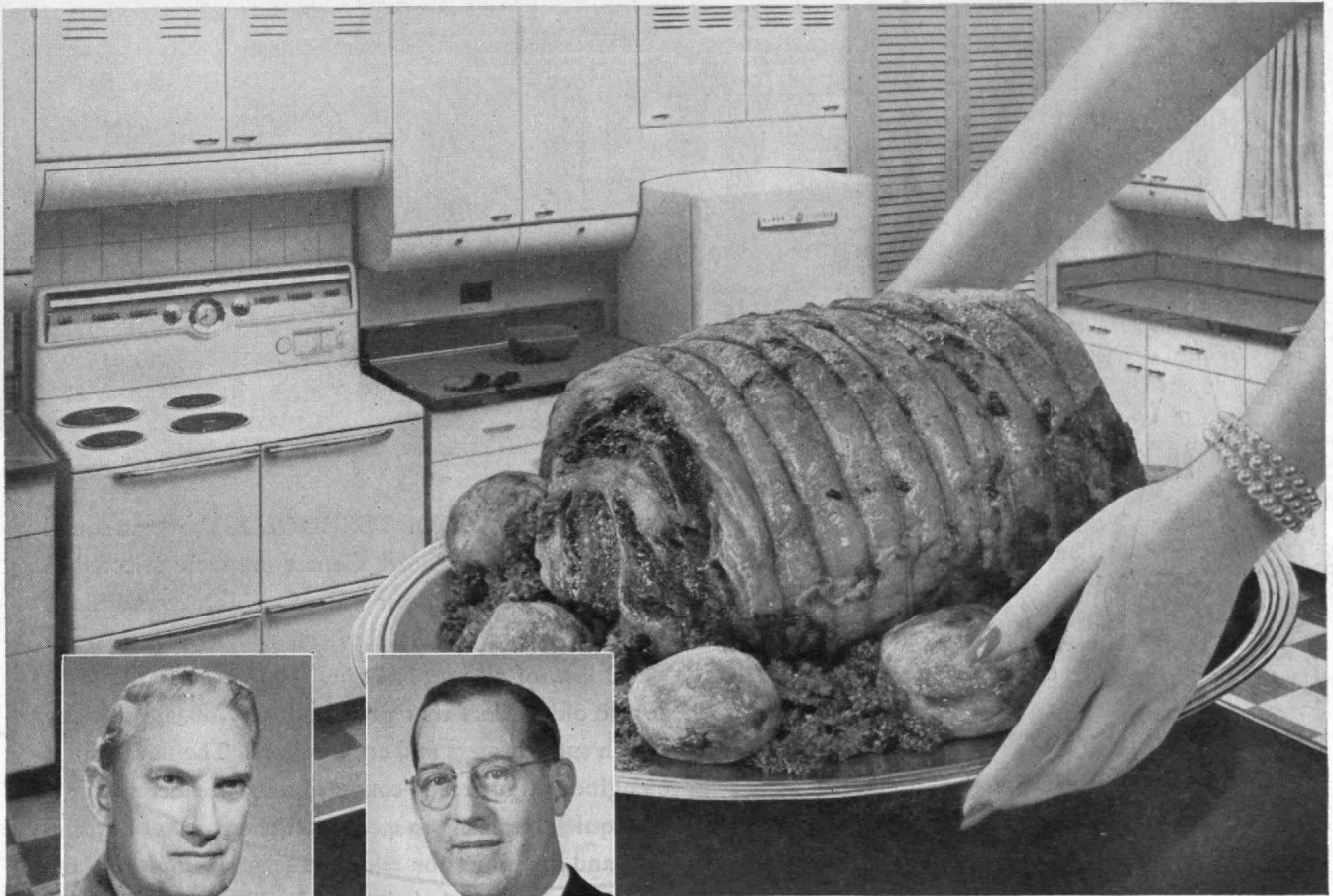
Mother's mixer, dishwasher, and refrigerator have scores of parts ground with Norton wheels and machines. Their satin smooth finishes would not have been possible without Behr-Manning coated abrasives. And their gleaming porcelain enamel is baked in furnaces lined with Norton high temperature refractories.

Thus in every part of life and in every phase of industry, Norton and Behr-Manning abrasives and abrasive products create usefulness, beauty and value in finished goods. Together, Norton and Behr-Manning are the world's largest source of abrasive and abrasive products.

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**BEHR-MANNING** makes abrasive paper and cloth, oilstones, abrasive specialties, pressure-sensitive tapes. Behr-Manning Corporation, Division of Norton Company, Troy, New York.

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DR. L. A. HANSEN, Director of Research, Abrasive Division, of Behr-Manning. Dr. Hansen was in charge of the research and development work which resulted in "TUFBAK" SPEED-WET DURITE Paper for wet sanding.



ARCHIBALD H. BALLARD, resident director of the research laboratories at the Norton electric furnace plant, where 32 ALUNDUM abrasive was developed — the most outstanding abrasive development of the last 45 years.



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## NORTON • BEHR-MANNING



# **M.I.T.,** famous engineering school, uses **WICKES** boilers for steam production

Consultants — JACKSON & MORELAND, ENGINEERS of Boston, Mass.

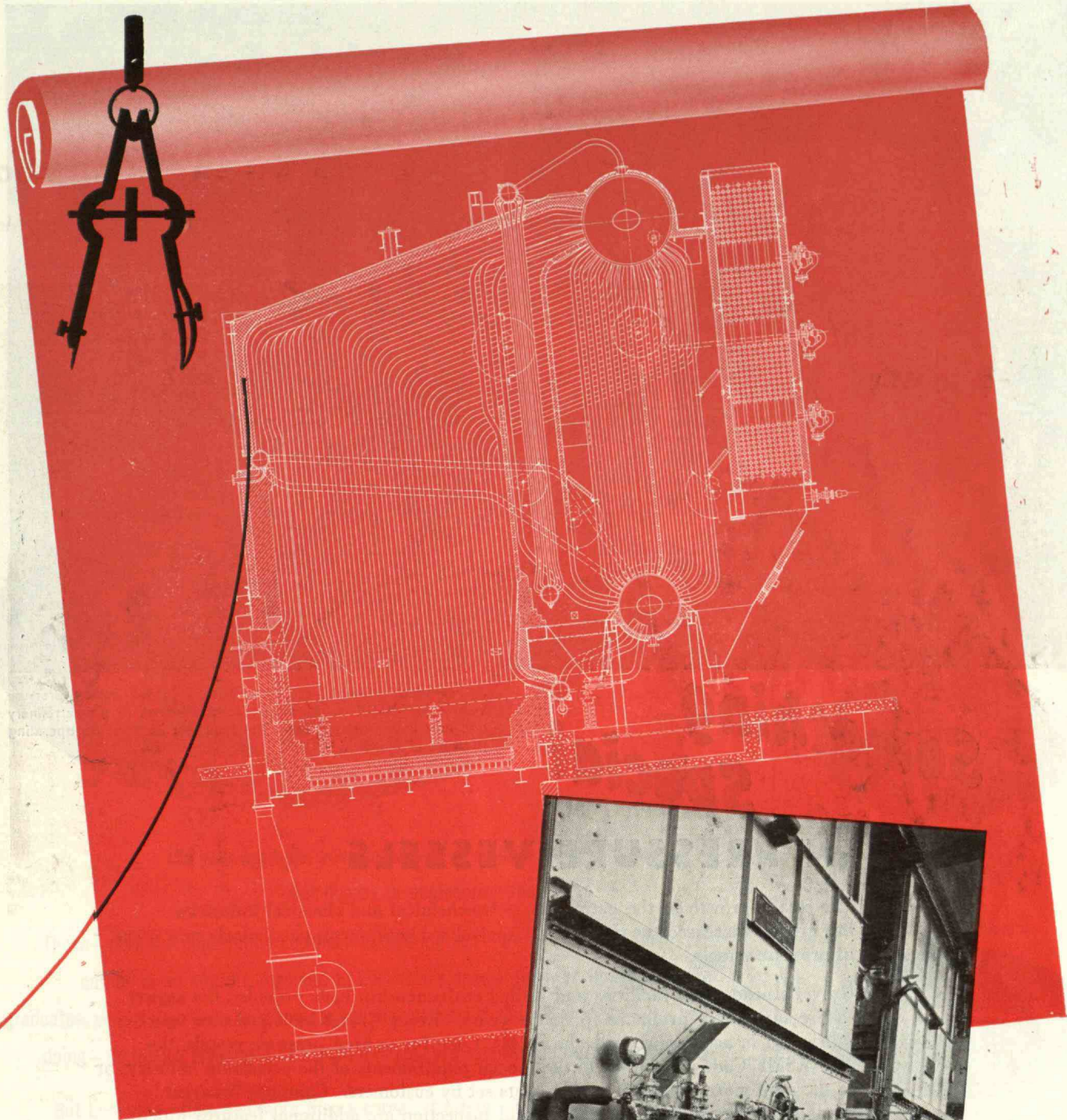


AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY, where sound engineering principles are taught, two Wickes Steam Generators were selected to supply heat for several new buildings including the Hayden Library and Sloan Metals Research Laboratory. The Wickes Boilers, which were custom-engineered for M.I.T., produce 160,000 lbs. of steam per hour. They occupy the same space formerly occupied by the two old boilers that produced only 40,000 lbs. per hour. They are equipped with superheaters and economizers. The new boilers are oil-fired at present but are engineered for ready conversion to spreader stoker if desired. They are designed for quick steaming to meet emergency power requirements and are fitted with thermowells and openings for taking flue gas samples so the students at M.I.T. can run boiler tests as part of their instruction. The installation of these boilers, an extremely difficult job because of the close erection tolerances, was handled by Flagg, Brackett & Durgin, Inc., Wickes' agents in Boston. **✓ ✓ ✓**

Wickes can fill your requirements for steam generators up to 250,000 lbs. per hour and 1000 psi.—all types of multiple drum boilers adaptable to any standard method of firing; oil, gas, underfeed or spreader stoker. Write today for descriptive literature or consult your nearest Wickes representative.

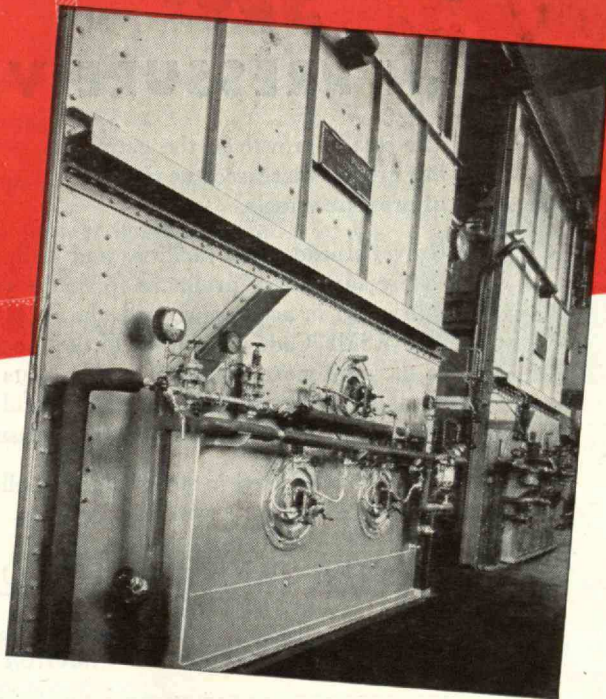
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*ABOVE: Blueprint diagram of one of the Wicks Steam Generators at M.I.T.*

*RIGHT: View showing the two Wicks Boilers installed in the power plant at M.I.T.*



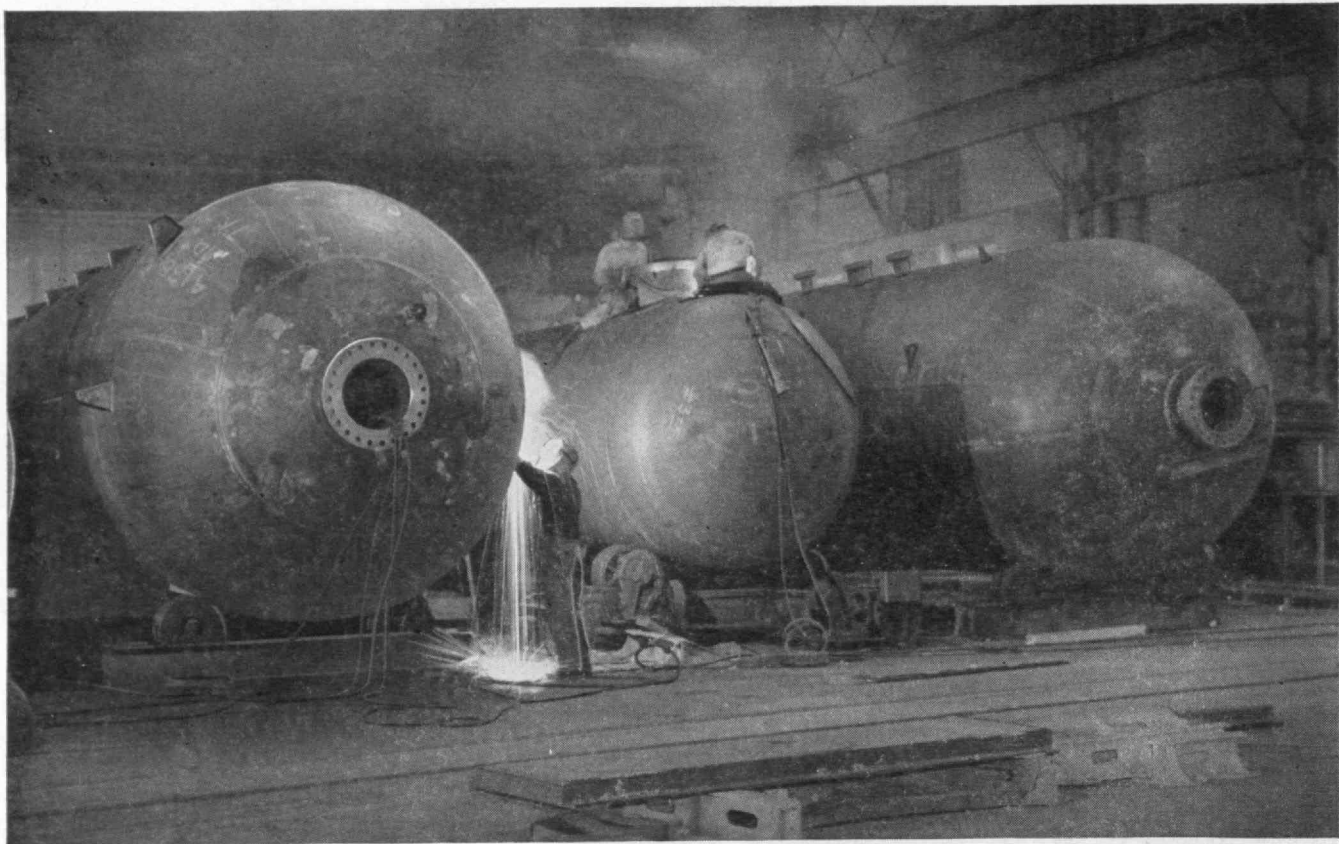
# WICKES

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Graver's production facilities and skilled craftsmanship have provided the answer to pressure vessel problems for many years. Every Graver-built pressure vessel is fabricated in accordance with the ASME Code for unfired pressure vessels, the API-ASME Code as adapted to the special requirements of the petroleum industry, or to the even more stringent requirements set by customers. Complete X-raying, stress relieving and equipment for rigid inspection are additional features which assure that every fabrication will measure up to the requirements expected of it.

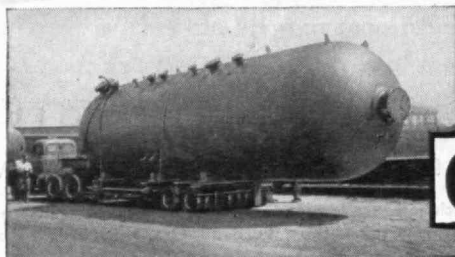
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doing—on-the-job training. But whichever it is, you receive full pay while learning.

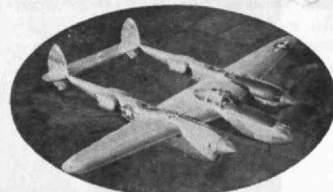
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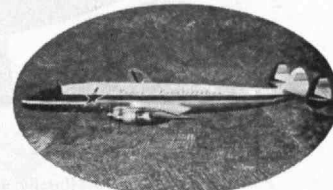
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The P-38 Lightning—first 400 mile  
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This plane—which exists only in  
the brain of an engineer like yourself  
—is one reason there's a better  
future for you at Lockheed. For  
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with ideas, engineers with  
imagination, engineers who build  
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Travel to the  
northernmost Army outpost —  
in "shooting" distance of the Pole  
— you'll find National  
receivers on the job!

## FROM FROZEN WASTE TO STEAMING JUNGLE

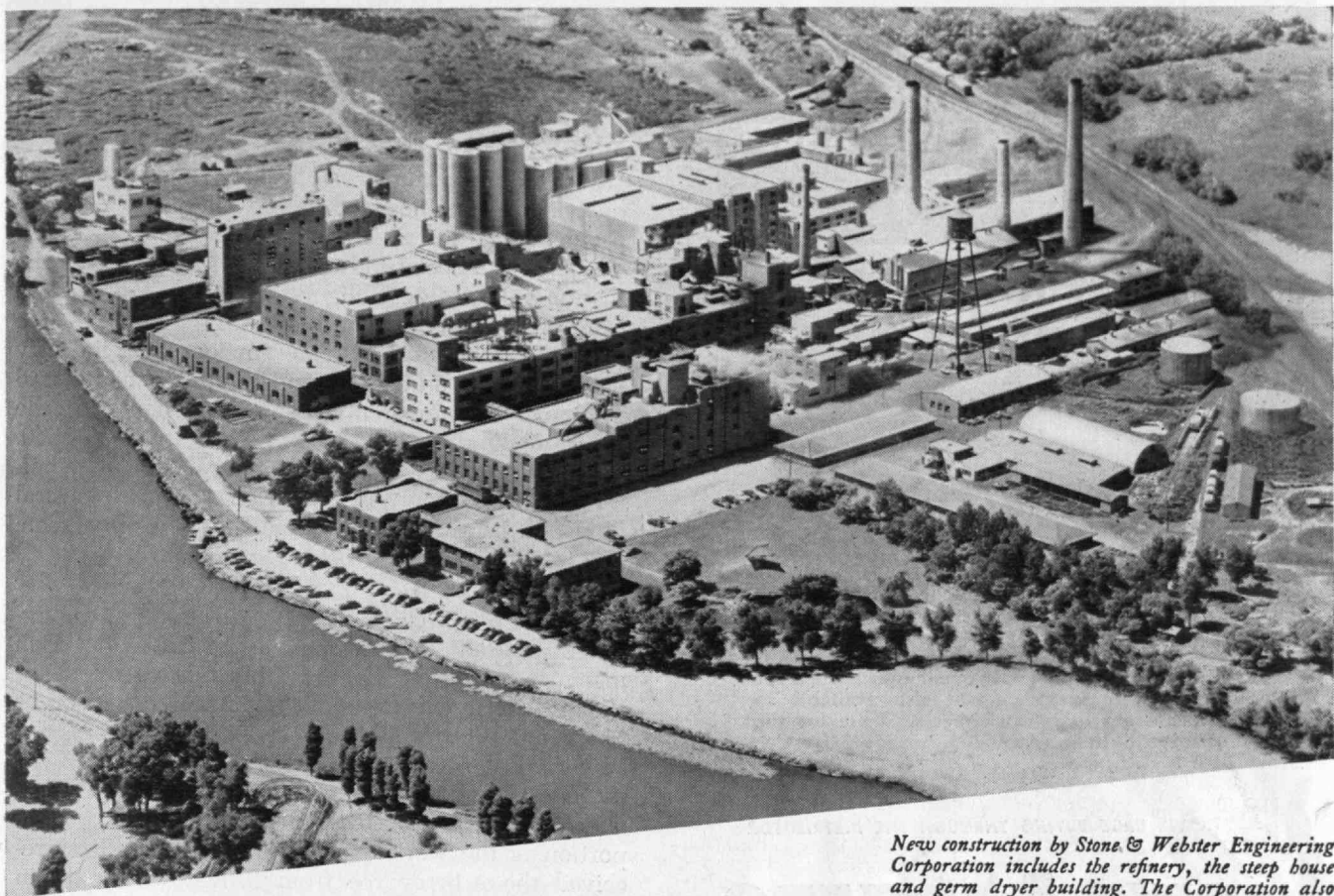


Slash your way  
through the African jungle  
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Literally, you'll find National receivers all over the  
world — on Navy ships at sea — on South American mountain  
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ELECTRONIC EQUIPMENT AND COMPONENTS



*New construction by Stone & Webster Engineering Corporation includes the refinery, the steep house and germ dryer building. The Corporation also installed processing equipment in the existing buildings and redesigned and enlarged the plant process disposal system.*

## FROM ICE CREAM TO PENICILLIN

From the Roby, Indiana, plant of the American Maize-Products Company come dehydrated corn syrup which is a component of commercial ice cream; corn starch; corn syrup used in candy manufacture; animal feed; and media for growing penicillin.

To design and build the recently completed additions to its Roby plant, the Company employed Stone & Webster Engineering Corporation.

*One of the many products manufactured by American Maize-Products Company.*



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## THE TABULAR VIEW

**Corrosion Resistance.** — The effective and comparatively simple method of rust prevention by cathodic protection is described (page 251) by HERBERT H. UHLIG, '32, Associate Professor of Metallurgy at the Institute. Professor Uhlig received the B.S. degree from Brown University in 1929, and the Ph.D. degree from M.I.T. in 1932. After excursions into industry between 1932 and 1936, and again from 1940 to 1946, he was research associate in charge of the Corrosion Laboratory at M.I.T. from 1936-1940. Since 1946 he has been associate professor of metallurgy in that same post. He is consultant to several industrial firms and the Atomic Energy Commission, and is editor of the *Corrosion Handbook*.

**Protein Research.** — As part of a broad and long-range program on research on proteins — in which many members of the Institute's Department of Biology are involved — work has been carried on at M.I.T. on the development of artificial sutures for surgery. Progress in this field is reported (page 255) by IRWIN W. SIZER, Associate Professor of Physiology, who has been responsible for a substantial portion of the work on sutures. Professor Sizer received the A.B. degree from Brown University in 1931, and the Ph.D. degree from Rutgers University in 1935 when he joined the Institute's staff.

**Chemical Warfare.** — As a companion piece to his article, "Biological Warfare," in the November, 1952, issue of *The Review*, JAMES A. TOBEY, '15, has prepared the story on "Chemical Warfare" which appears on page 259 of this issue. Disturbing as it may be to recognize that civilian populations can now be exposed to warfare, one can glean some ray of hope from Dr. Tobey's assurance that national preparedness, coupled with public enlightenment, is the best and most effective measure to employ in minimizing disasters. Dr. Tobey has had a versatile and distinguished career in the broad field of public health, as last recorded on page 12 of the November issue. Dr. Tobey recently served as a colonel in the Army's Medical Service in Texas, and not in Korea as was reported in November.

**Educational Concept.** — ARAM BOYAJIAN, whose personal views appear in "The Education of Tom, Dick, and Harry" (page 262) has been associated with both industry and educational institutions for many years. Since 1924 he has been a nonresident member of the Institute's staff, in the Department of Electrical Engineering, engaged in teaching cooperative students during their industry assignments; and more recently he has been a visiting lecturer. As an engineer with the General Electric Company, Mr. Boyajian is well known as the author of many papers on transformer theory and circuit and system problems, and has given career guidance to many young people who have come within the radius of his inspiration.



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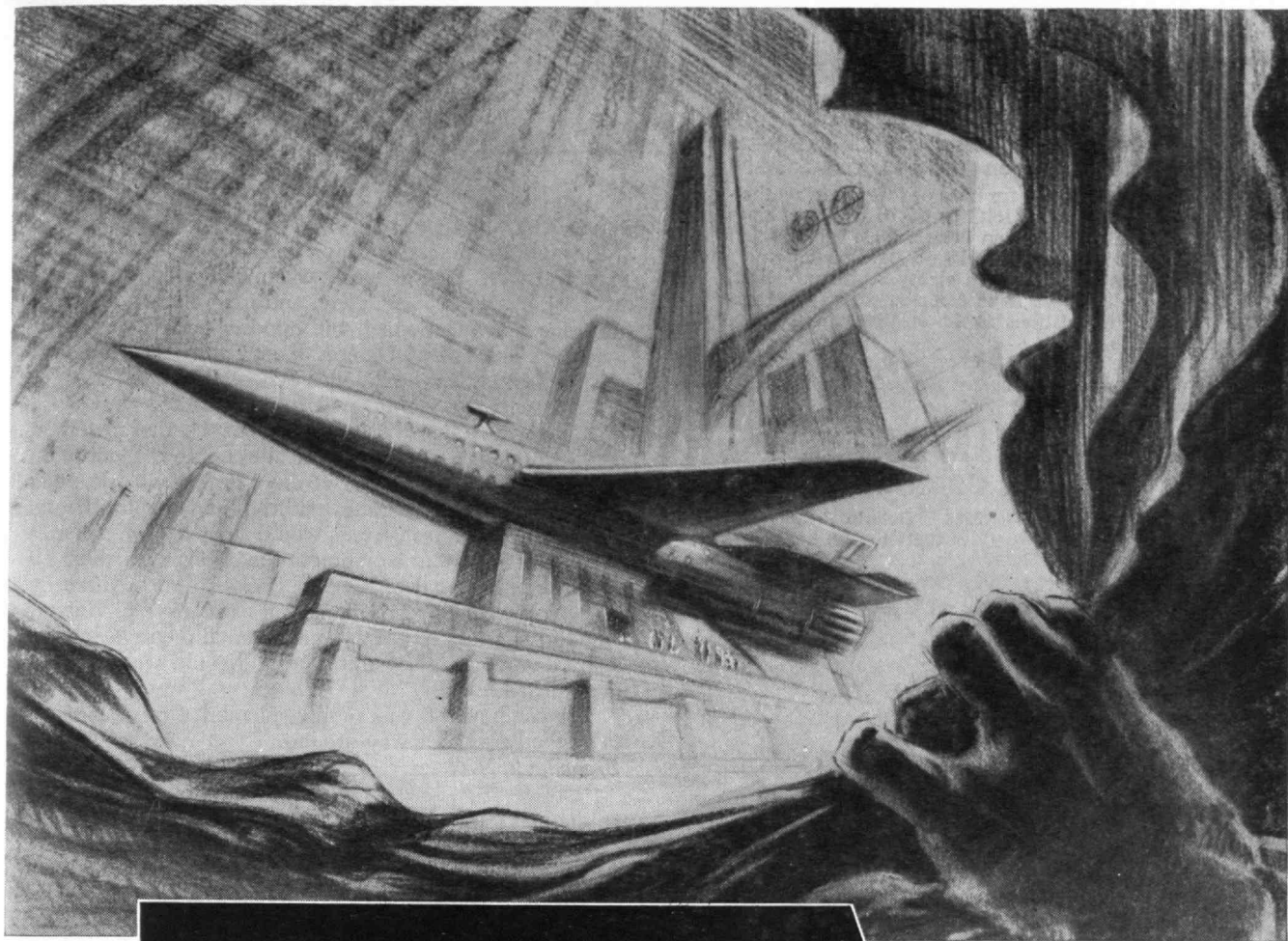
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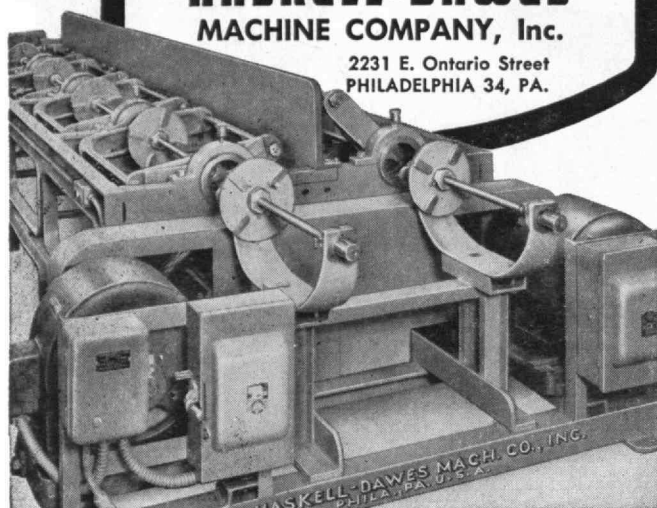
ROPE machinery for hard or soft fibres, synthetics, cotton. • LAYING or CABLING machines for smaller cords and twines. • TWISTERS and FORMERS for yarns, twine, paper, etc.

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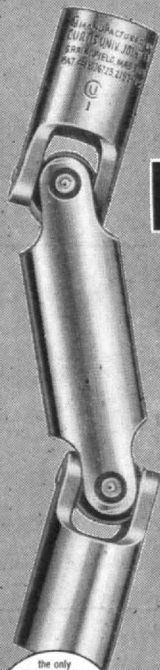
Write Dept. T-2 and we will send you technical bulletins that may suggest ways in which we can help you.

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## MAIL RETURNS

### Chemistry Cleared

FROM ANTHONY STANDEN, '29:

I should like to express my appreciation of "An American at Oxford" by Eugene B. Skolnikoff which appeared in the January, 1953, Review, and report a few notes on the same combination, in the opposite order, for I first studied chemistry at Oxford, then Course X (Chemical Engineering), with the Practice School at M.I.T.

At Oxford the instructors explained things very well, but they were a little bit careless about whether a student could work out a simple numerical example without making a "slip-stick" error. But at any rate, they made *quite sure* that the student understood the fundamental theory.

At M.I.T. the instructors would fling a new, complicated, and important equation at the pupils, give them 10 tough numerical examples, and say: "Do all of these by nine o'clock tomorrow!" Sometimes there were students who did not understand the fundamental theory — but the instructors made *quite sure* that you could work out the numerical examples.

The combination was simply splendid. I recommend it to anybody — either way around.  
Brooklyn 2, N.Y.

### Challenge to Management

FROM LOWELL L. HOLMES, '23:

Thank you and Edward McSweeney for his challenging article "The Managerial Evolution" in the December, 1952, issue of The Review. The author has expanded our horizon by taking us up on a high peak and letting us see what is happening in terms of Toynbee's masterful analysis of the breakdown of civilization.

Thirty years' study of the human structure of business and industry combined with selection of growth potential leaders forces me to observe grudgingly that many of our so-called leaders are strictly "Survival of the Unfit." I feel certain that a highly readable and challenging book could be made from exploitation of "what to do now" to develop leaders with a lighted torch and to gather the "disciples" in a crusade for better management.  
Indianapolis, Ind.



Sonoco Products Co., Mystic, Conn.

From experience on current building, we can assist you by presenting budgetary estimates, comparative costs and other information decidedly helpful to an executive facing the problem of plant expansion.

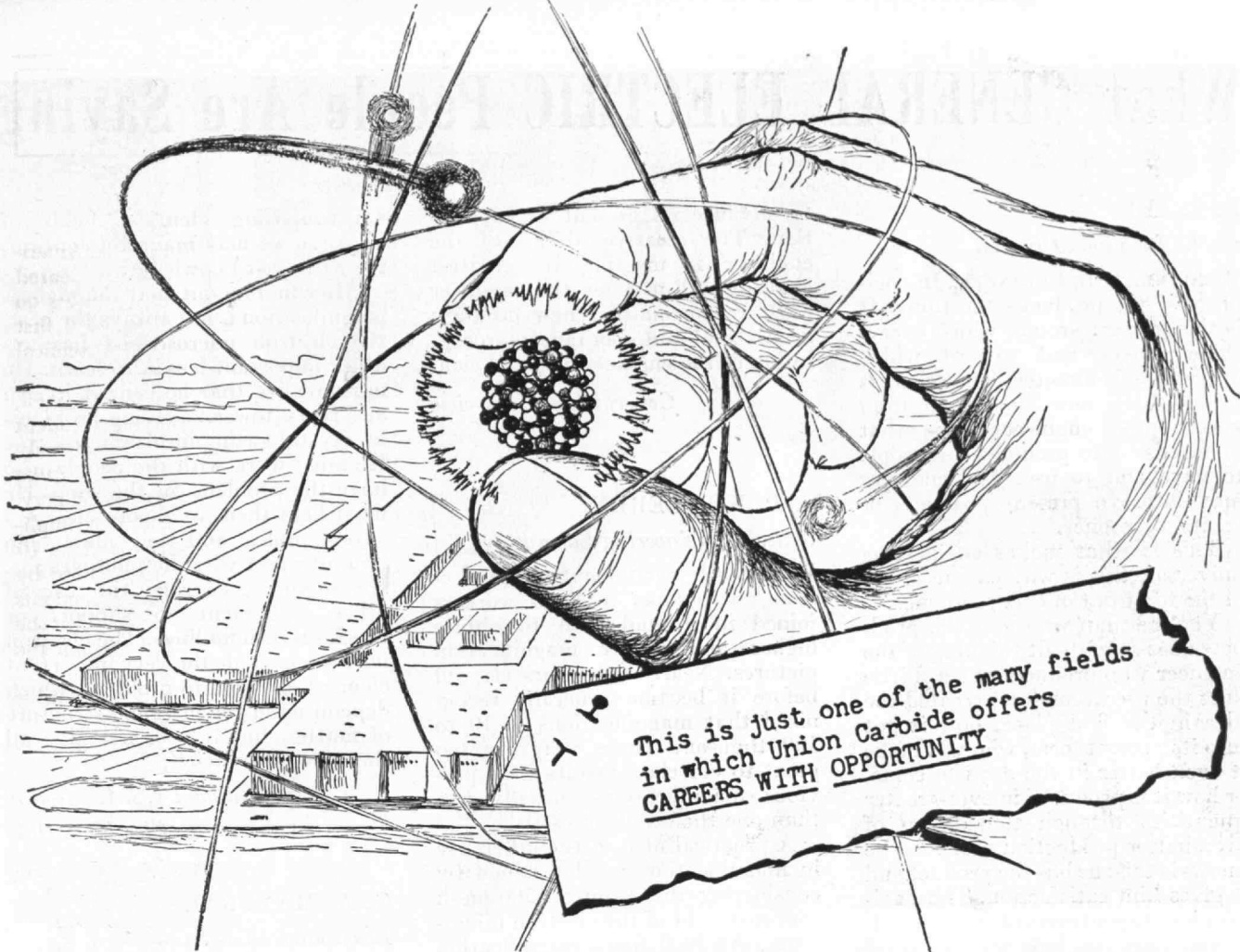
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## What does Atomic Energy really mean to you?

Dramatic new developments in medicine, agriculture, and industry promise long-time benefits for us all

Scientists have long known that the secret core of the atom concealed vast stores of concentrated energy. Evidence that man had unlocked the secret came with the atomic bomb.

Then came the task of developing methods to release this unbounded energy slowly, gradually, in ways of lasting benefit to all of us.

**ISOTOPES AN EXAMPLE**—When uranium atoms are split they emit a barrage of highly active particles. Certain chemicals placed in this barrage become radioactive and shoot off particles from themselves. Substances thus treated are called radioactive isotopes.

When these chemicals are made radioactive their paths can be traced through plants and animals, showing the organs they affect. This may increase our understanding of the processes of life itself.

**FUTURE UNLIMITED**—Atomic energy is also proving useful in industrial research and production. It promises to be even more valuable, however, in providing concentrated power for transportation, home, and industry.

**UNION CARBIDE'S PART**—From the beginning UCC has had a hand in the mining and treatment of uranium ores, the development of engineering processes, and the production of special materials for the atomic energy program. Under Government contract Union Carbide manages and operates the huge research and production installations at Oak Ridge, Tenn. and Paducah, Ky.

All of this activity fits in with the continuing efforts of the people of Union Carbide to transform the elements of the earth into useful materials for science and industry.

**STUDENTS and STUDENT ADVISERS:** Learn more about the many fields in which Union Carbide offers career opportunities. Write for the free illustrated booklet "Products and Processes" which describes the various activities of UCC in the fields of ALLOYS, CARBONS, CHEMICALS, GASES, and PLASTICS. Ask for booklet D-2.

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# What GENERAL ELECTRIC People Are Saying

E. S. LEE

*Public Relations Division*

**RECOGNIZE THE ENGINEER:** In engineering, the product's the thing. It is the product around which everything moves and toward which everything is directed. The scientist brings forth new knowledge from nature; the engineer forms that knowledge into products for people to have and to use. The engineer may improve present products or create new ones.

This is what makes engineering universal; this is why engineers are in the forefront of every advance.

Yet the man who uses the products does so without thinking of the engineer who produced them. Little does the user know who created the idea in the first place, how it got into its present form, who will make it even better in the days to come, or how it is produced in ever-greater quantities through the design of even-better production tools. All he knows is this: he has the product and it gives him satisfaction. The engineer is not spontaneously recognized.

The engineer has been so busy doing things that he has not brought his story to the people of our country. Therefore they do not recognize the importance of his story, and thus far his recognition has been a problem for him alone. But today the seriousness of our world situation has taken the problem out of his hands. It is now a problem for the nation—engineers must be conserved for engineering, and their numbers must be increased.

This demands an earlier understanding of the engineer by the public at large. It demands that he receive the recognition due him in substantial degree. It demands that military assignments be made only for necessity in technical matters. It demands that secondary-school curriculums be complete with the necessary physics and chemistry and mathematics to provide the best training for those entering engineering schools. And it demands that those young people capable of advancing in engineering be eager to tackle the hard work which the training requires.

There is an imperative need for this understanding if our nation is

to advance its present world position. The creative ability of the engineer is meeting its greatest challenge. But now the engineer must create another new product: a universal and spontaneous recognition of the engineering profession.

*General Electric Review*



S. P. NEWBERRY

*General Engineering Laboratory*

In the early excitement of the electron microscope, research workers joined in a mad rush to obtain higher and higher magnification pictures. Nearly five years elapsed before it became generally recognized that magnifications of 10 to 100 thousand times were far too great to correlate results with previous magnifications, usually less than one thousand times.

A practical idea of the difference in magnification can be gained by considering the  $\frac{1}{8}$ -inch, 200-mesh specimen grid of the electron microscope. At 1000 times magnification its image is 10 feet across, and a single mesh opening is approximately 2" square. Now at 100 thousand times magnification the screen is more than  $\frac{1}{5}$ -mile across and the individual mesh opening is over 17 feet. An 8" x 10" picture obtained at 100 thousand times represents a sampling of only .2% of the area of a mesh opening and only 2/100,000% of the tiny  $\frac{1}{8}$ " specimen we started out to explore. Experience has taught us that we must increase magnification in gradual steps of about 3X per step if we are to form a definite conclusion of how the minute structures are correlated with the over-all structure. Indeed, when we change methods of viewing or methods of specimen preparation, it is often necessary to compare pictures at the same magnification, actually

superimposing identical fields of view, so we may maintain continuity with past knowledge.

After finding out that the highest magnification is not always the best, the electron microscopist has another important lesson to learn. He must realize that he cannot live in an "ivory tower," solving problems by crystal gazing in his microscope. He must work with the people who have the problems in the shop. He must help them to choose and prepare samples, and they must help him interpret what he photographs. He should encourage the use of other equipment to support or check his own findings. The electron microscope adds the very important element of vision to problems which depend upon the ultrafine structure of matter, but it does not give all the answers by itself.

*7th National I.S.A. Meeting  
Cleveland, Ohio*



G. A. MAYORAL

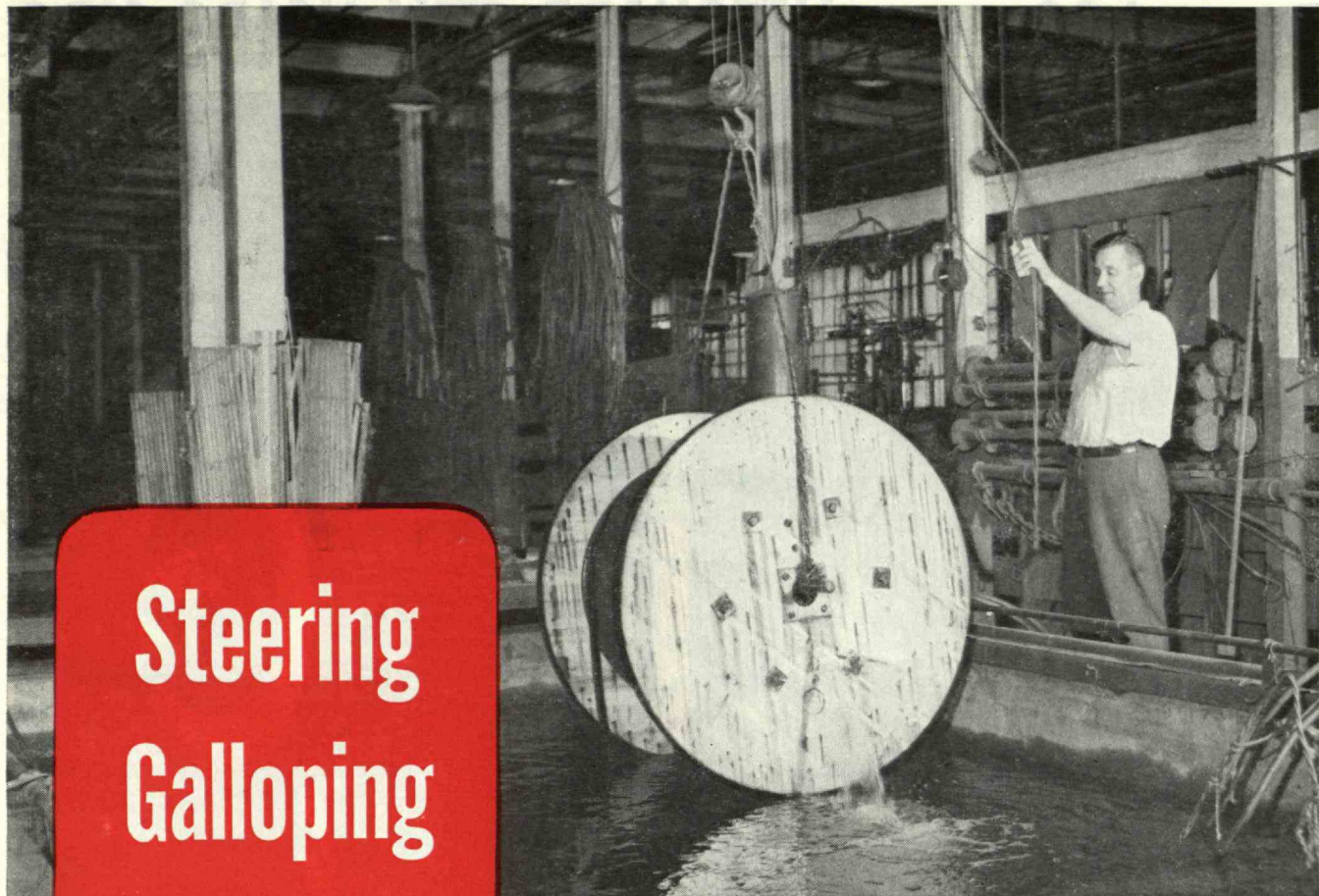
*Electronics Division*

**THE FUTURE OF TELEVISION:** UHF television—which is essentially television in a new segment of the radio spectrum—presents a challenging opportunity to American ingenuity both in engineering development and from the standpoint of programming, education, and commercial enterprise. No longer will telecasting be limited by unavailability of frequencies, but the limit on the number of TV stations will rather be placed on the ability of the broadcaster to obtain his fair share of the audience. UHF TV makes possible a truly competitive system of telecasting in accordance with American democratic principles. It will some day blanket the country with reliable television signals from thousands of television towers.

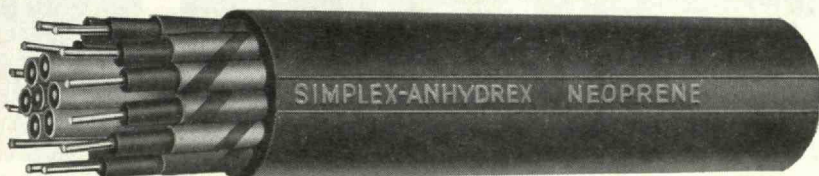
*G-E Educational Service News*

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# Steering Gallop Horsepower



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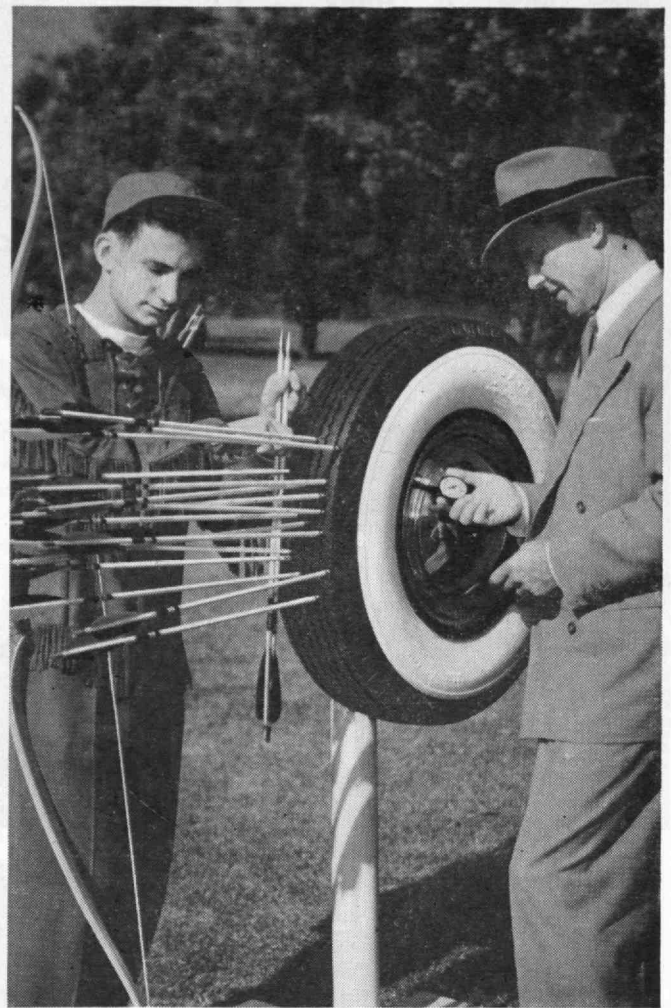
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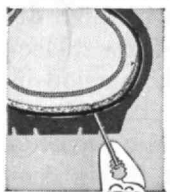


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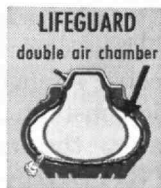
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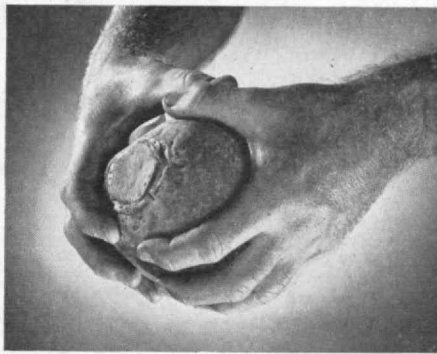
Install LifeGuards in your present tires. Or have them installed when you buy your new car. You'll get full value for original equipment tubes; you'll never notice the small extra monthly payment. Goodyear, Akron 16, Ohio.

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by **GOODYEAR**

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"Beware the ides of March."  
—Shakespeare

# THE TECHNOLOGY REVIEW

TITLE REGISTERED, U. S. PATENT OFFICE

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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Ward Allan Howe

*Norway's bark, Statsraad Lehmkuhl, at Hudson River Pier, New York*

# THE TECHNOLOGY REVIEW

Vol. 55, No. 5



March, 1953

## The Trend of Affairs

### A New Mineral Fuel

THE term "mineral fuel" has commonly referred to coal and petroleum. Yet an official of the Atomic Energy Commission has recently stated that there is more potential energy in the known workable sources of uranium than there is in the world's reserves of coal and oil. The increasing interest in uranium as a source of industrial power is stimulated not only by the development and construction of atomic-powered engines for submarines, carriers, and airplanes, but also by indications that breeder reactors may soon be an actuality. A breeder reactor is one which can convert the common isotope of uranium,  $U^{238}$ , (or of thorium) into plutonium by use of the fissionable isotope  $U^{235}$ . The trick, of course, is to obtain one or more atoms of plutonium for every atom of  $U^{235}$  expended, and to recover at high-temperature levels the tremendous quantities of power given off during the process.

In the future large amounts of electric power may be generated by nuclear fission. The possibility of the process has already been demonstrated on a small scale by a reactor testing station of the Atomic Energy Commission, and industry is co-operating with the Commission in surveys to determine how electricity can be produced economically by means of nuclear reactors. The most promising procedure seems to be to generate electricity as a by-product of plutonium production. At present, nuclear fission does not loom as a likely contributor to electric power generation for at least another decade, and it may always remain a heavy net consumer of — rather than a contributor to — electric power. But the civilian applications of uranium are certainly worthy of serious consideration.

Uranium is not a particularly rare element in the earth's crust, although finding concentrated ore bodies is quite another matter. The geologists estimate that

the igneous rocks which compose 95 per cent of the outer 10 miles of the earth's crust contain 0.010 per cent copper, 0.008 per cent uranium, 0.005 per cent tungsten, and 0.004 per cent zinc. There is actually about one-fourth as much lead in the earth's crust as there is uranium.

To contrast prewar attitudes toward uranium with today's intense, if not frantic, search for this metal, consider this statement from a textbook on economic geology published prior to world knowledge of the atom bomb. "Uranium is desired chiefly to obtain radium, but its salts are used to give yellow to brown colors for glass and glazes and for special alloys of steel, copper, and nickel.\*

The Atomic Energy Commission has listed the principal sources of uranium ore as the Colorado Plateau, the Belgian Congo and the Great Bear Lake region in Canada. New mines in northern Saskatchewan and in Australia appear promising; and developments to obtain uranium as a by-product of the gold mines of South Africa and the phosphate mines of this country are under way.

### Shine 'Em Up

CASTE marks can occasionally be found even in the relatively caste-free American society. Thus in the May, 1952, issue of *The Review*,† Frederic W. Nord-siek, '31, told how writing implements have become caste marks in the modern business office hierarchy. An American caste mark of even wider import is the shoeshine. For the shining of shoes has no hygienic significance and little utilitarian importance, but is purely a matter of appearance. Indeed the laboring man may wear out pair after pair of shoes with never

\* Alan M. Bateman, *Economic Mineral Deposits* (2d ed.: New York: John Wiley and Sons, Inc., 1950), page 614.

† "Having Writ, Moves On," 54:357.



a thought of a shine, whereas the affluent executive usually has his shoes shined daily — even twice a day if he attends some evening function.

A curious aspect of shoeshining is that this is the only cleaning operation applied to human apparel while it is worn. Clothing, hats, and gloves are always removed before being dispatched to the laundry or cleaner; but the traditional cleaning and shining of shoes is performed while the wearer perches on a shoeshine stand or places his foot upon the box of an itinerant bootblack.

This procedure in cleaning shoes arises in part from the particular methods needed to refurbish leather. For leather remains the principal material used to make shoe uppers. Although cloth and plastics have some applications in women's shoes and in sport footgear, no material other than leather provides that material's toughness, flexibility, limited porosity, and the particular working qualities needed to mold the complicated contours of shoe uppers. Leather has one adverse quality, however, a tendency to crack and crumble in time. Postponement of such deterioration is the one practical aspect of the shoeshine, which otherwise has a purely aesthetic significance.

The ritual of the shoeshine exhibits minor local variations, but is basically the same everywhere. First comes cleaning, which is accomplished with a water-base cleaning fluid and a stiff brush. Then "lotion" is applied; this is an emulsion of oils designed to soften the leather and postpone deterioration. Finally wax is spread over the entire shoe upper, and is brought to a high gloss by scrubbing with a horse-hair brush,†† followed by buffing with a cotton flannel cloth. Dyes approximately matching the original shade of the shoes are usually incorporated in cleaner, lotion, and wax, in order to maintain a uniform color of the shoes by filling in scuff marks.

Although laundering and dry cleaning have been extensively mechanized, shoeshining remains inherently a hand operation. This fact, plus the custom of shining shoes while they are worn, gives rise to that sociological phenomenon, the itinerant bootblack. These men (or boys) carry their tools and materials in a small box, on top of which is a rest to accommodate the customer's shoes. On the streets of many communities, in barbershops, or at small stands where many persons pass by daily, and in the corridors of large office buildings, may be seen these peripatetic shoeshiners. Like police or taxicabs, they appear to be most numerous when their services are least required, but are conspicuous by their absence when urgently needed. On the city streets, their numbers do not appear so frequently as in bygone years. It is hard to say whether this observation can be attributed to the comparatively elevated status of the working man or to the decline of private enterprise. Under modern conditions, one might expect this tribe to thrive: the capital required to set up business is exceedingly modest; there are no books to keep; no employees or unions with which to bargain; shop location can be adapted to current needs; and operations can be suspended at a moment's notice should a run of consistently good business throw the entre-

†† See "No Brush-Off," *The Technology Review*, 53:465 (July, 1951.)

preneur into a higher income tax bracket where further return is not worth the effort. But possibly the decline in their numbers is the result of inexorable economic forces which price much of today's personal service beyond reasonable means, for certainly the "nickel shine" is as obsolete and antiquated as the penny newspaper, the five-cent cigar, or the free lunch that went with a cool draught of lager.

Elite of the shoeshine craft are the bootblacks of the business offices. These artists pay daily visits to the top executives of the various concerns, whose shoes must by custom be maintained in a state of high brilliance, but who of course cannot take the time to perch on the chairs of a shoeshine parlor. These busy men extend one foot at a time to the ministrations of the bootblack, while sitting at their desks — telephoning, dictating correspondence, or even while conducting meetings. The same bootblack pays occasional professional visits to other employees throughout the office — the frequency being determined by the administrative level of the individual, which fixes the degree to which his shoes need to gleam. Thus the bootblack may be the only person who has regular daily contacts with all levels of the office society; and who therefore can, for example, give a lowly clerk firsthand reports of the current disposition or indisposition of the head man of the organization.

These peripatetic bootblacks, like barbers, frequently develop into conversationalists and philosophers of sorts. Also they are often punctilious craftsmen, with considerable pride in the quality of their work. And, like all craftsmen, they are apt to be jealously critical of their colleagues. Thus one member of the large crew of bootblacks operating in a huge midtown New York office building complex, that covers several contiguous blocks, tells his customers that he is the only member of the squad who does not give a "military shine." When pressed for an explanation, he replies, "You know — a good soldier never looks behind!"

### ***Library Receives First Copy of First Book Made by New Process***

THE first copy of the first book set by a revolutionary type-composing process was presented to the Institute's library during a luncheon ceremony held at the Faculty Club on February 5. The book, *The Wonderful World of Insects* by Albro T. Gaul, is the gift of the Graphic Arts Research Foundation, Inc., of which William W. Garth, Jr., '36, is president. The Foundation has developed the photographic type-composing machine based on inventions of two French communications engineers — Rene A. Higonnet and Louis M. Moyroud. The photographic composing process produces a photographic negative of text material from which metal plates may be etched for the actual printing operation. Composition by the new method is accomplished with a machine which has a standard typewriter keyboard. The new method permits lines to be justified or spaced as required, gives the operator a wide choice of type sizes and fonts, and eliminates the need for storing substantial quantities of type metal.

# Prevention of Rust

## *Important Applications in Retarding Corrosion of Pipe Lines and Ships Stem from Researches on Electrolysis*

By HERBERT H. UHLIG

IN March, 1824, a significant experiment in corrosion control was under way at Portsmouth, England. Sir Humphrey Davy, well-known head of the British Royal Institution, fitted several cast-iron blocks onto the keel of the *Sammarang*, a British warship of 28 tons. Like all ships of that period, it was a wooden vessel with an underwater portion sheathed with copper in order to discourage damage by the teredo or shipworm. The cast-iron blocks, totaling one-eighth the area of the copper sheathing, were applied near the stern and bow for the purpose of protecting the copper from corrosive attack by sea water. Sir Humphrey and his assistant, Michael Faraday, previously showed in the laboratories of the Royal Institution that metals like iron, tin, or zinc, attached to copper in certain area ratios, protected the copper from corrosion in salt water; hence, they were anxious to prove that this idea was applicable to seagoing ships.

The *Sammarang*, after this something "new" was added, made a trip to Nova Scotia, returning to England in January, 1825. Davy was on hand at Portsmouth to examine the ship and to determine the outcome of his experiment. He found everything satisfactory and in accord with what he expected. The copper was bright for a considerable space around the cast iron, and only at the central parts of the ship did green copper corrosion products show. Even here, according to Davy's report, there were but small quantities of light powder. He observed slight adhesion of rust around the cast-iron protectors at the stern, and on the rust were attached a few marine plants and animals. The appearance was considerably better than the previous spring when all the hull was covered with a thick green copper carbonate and copper oxychloride.

However, the newspaper reporters perturbed Davy with their account in the London papers. They stated that the *Sammarang* returned to Portsmouth covered with weeds and barnacles, implying that the iron attached to the copper had not succeeded in keeping them off. Sir Humphrey admitted to fouling in local areas, but this, he stated, was not a serious matter. Important, in his opinion, was the fact that the copper sheathing had been protected from corrosion; hence, this constituted a promising method for saving the British Admiralty both expense and holdup time needed for repairs.

The British Admiralty heartily endorsed the objectives of Davy's tests and readily co-operated in several trials to establish whether the Navy might benefit. But the drawback of the idea, so far as one

can tell at this point, was the accompanying increased fouling by marine organisms, far more serious than Davy had estimated. The Navy, of course, accepted the prospect of longer life for copper sheathing, yet could hardly tolerate being slowed down even a knot or two by the accumulation of whiskered biological appendages to the hull and to the keel. When it was a question of accepting corrosion and high costs, or economy and a slower getaway, the military answer then was the same as is the inevitable answer now.

Davy's idea, therefore, was inherently correct in concept, but, like many laboratory experiments, it was not wholly successful in the particular practice chosen. Unknown to Davy, biological organisms common to sea water happen to dislike sitting on copper undergoing normal corrosion because of toxic copper salts slowly released, but the same organisms have no objection to making their home on copper if the metal is prevented from corroding, as when iron blocks are in electrical contact. (In sea water, about 0.05 milligram of copper corrodes per square centimeter exposed surface per day.) Davy later had hoped to regulate the protection so as to partially reduce corrosion of copper and, at the same time, discourage fouling organisms, but this, it turned out, was not easily done.

However inauspicious these first trials were, Davy established in the records the idea of a powerful and practical means for protecting all structural metals from corrosion. Successful large-scale applications came much later, at a time when metals were used far more generally than in 1825. The subject of corrosion gained reasonable notice perhaps not before the beginning of the Twentieth Century, when iron and steel production, to keep in step with the expanding industrial age, had increased to 10,000,000 tons annually. Many steel structures were then being erected, and large-scale production of labor-saving machinery was initiated. It gradually became apparent to engineers that the inevitable corrosion of metals was slowly but irretrievably undoing all that was being accomplished. However, corrosion, they thought, like the weather, was mostly something beyond their control. One could perhaps paint and use metallic coatings to help preserve a bridge or a ship, or with steel very cheap, it was always easy to overdesign, allowing sufficient thickness of metal for producing rust, yet allowing enough residual metal for an operable and safe structure over the course of 10 or 20 years. How long could this go on even in an economy of plenty?

It was here that Davy's idea provided at least a partial answer. Although his idea was apparently in



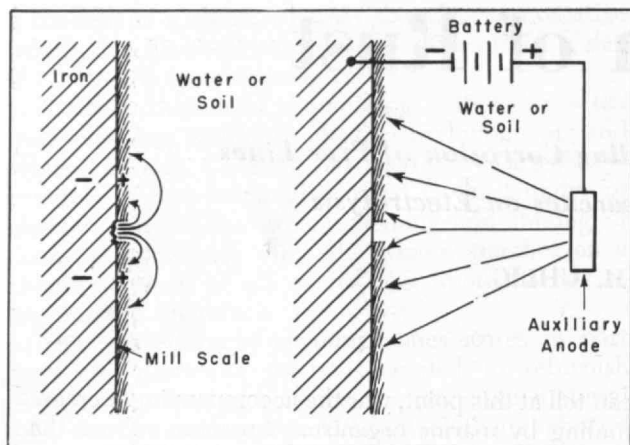


Fig. 1. Sketch of corroding metal (left) and prevention of corrosion by cathodic protection (right).

limited use before 1900 for prolonging the life of steam condensers and the sterns of ships, it was not until about 1910 that the method was improved upon and extended to the protection of buried pipe lines and cables. Decades later, Davy's method, now called cathodic protection, was applied to canal gates, marine structures, water tanks, and chemical equipment. Cathodic protection today is big business and employs in this country alone thousands of engineers, technicians, and auxiliary personnel. It has helped in a major way to save dollars and to conserve steel and human effort.

### Mechanism of Cathodic Protection

Corrosion is attended generally by electric currents at the metallic surface which cycle through the metal and the water solution in contact. The action is identical to that of a flashlight cell, in which corrosion of the zinc container supplies the major energy for lighting the bulb. The zinc container is one electrode of the cell, and the center piece of carbon the other electrode, with an ammonium chloride solution acting as a conducting aqueous solution or electrolyte. The more the cell is used, the sooner does the zinc container corrode through, and in the extreme, a copper wire placed across the terminals reduces the life of

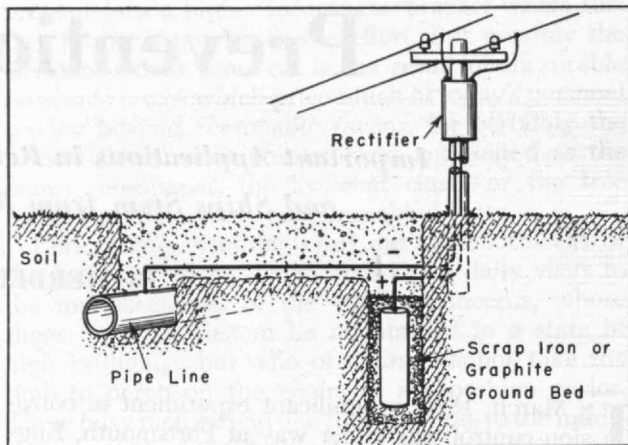


Fig. 2. Pipe line protected from rust by means of impressed electrical current.

the cell to a few minutes or hours. A corroding metal is closely analogous to such a short-circuited flashlight cell. A portion of the metal surface takes the place of the zinc container; other areas, such as impurities, act like the carbon, and the corrosive medium, which could for example be salt water, forms the electrolyte. The quantity of electricity produced and the corresponding corrosion are essentially proportional as Michael Faraday so ably proved in the 1830's.

The electrochemical nature of corrosion was suspected soon after Volta's announcement in 1800 of his "pile" for producing electric current. The latter was made up of dissimilar metal couples stacked one on the other and separated by paper or cloth impregnated with salt solutions. Several scientific papers on the relationship of reactions in the pile to corrosion of metals appeared in the early 1800's. But it remained for Willis R. Whitney, '90, in 1903, while Assistant Professor of Chemistry at M.I.T., to formulate a mature and generally acceptable electrochemical theory of corrosion based on the new physical-chemical concepts developing at that time in several European laboratories. It was his paper that stimulated the interest of engineers and scientists, whose attention to the subject had been focused previously by its increasing economic significance. One of the engineers so interested was William H. Walker, founder of the Department of Chemical Engineering at M.I.T., whose researches in corrosion (1908), carried on with the aid of his students, established some of the foundations of modern corrosion-control methods for water and boiler systems.

Cathodic protection is a means for overcoming or neutralizing electric currents which are responsible for corrosion at a metallic surface. This is done by supplying an external electric current to the metal through the corrosive medium sufficient to overcome natural corrosion currents leaving the metal and entering the electrolyte. (Areas from which current enters the electrolyte are called anodes, as contrasted with areas where current enters the metal from the electrolyte, called cathodes. Corrosion usually occurs only at the anodes.) The situation is not unlike the continuously climbing squirrel in a rotating cage who gets nowhere in the frame of reference passing through the axis of the cage despite much running.

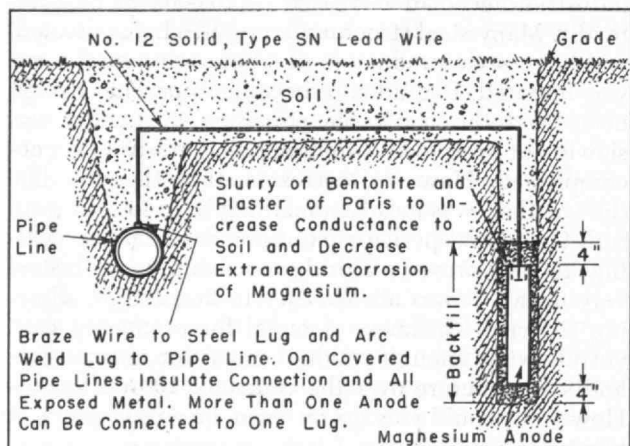


Fig. 3. Cathodic protection of pipe line using magnesium anode.

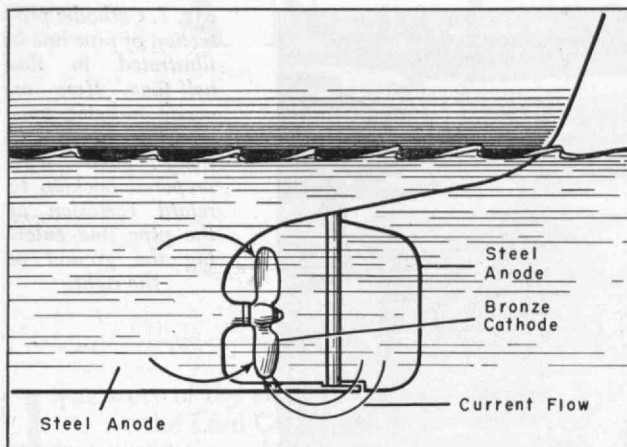


Fig. 4. Steel corrodes at accelerated rate in unprotected ship having steel hull and bronze propeller.

Metal ions, tending to leave the metal lattice in accord with their normal corrosion behavior, find themselves where they started because current entering the metal continually tends to bring them back, thereby preventing their entering solution in water. As long as this external current is supplied adequately, no corrosion of the metal can occur; in this sense, cathodic protection is capable of reducing corrosion virtually to zero.

A sketch illustrating the mechanism is given in Fig. 1. The left-hand figure shows a metal, in this instance iron, exposed to a corroding environment like water or soil. For our purposes, mill scale on the surface acts as one electrode, and iron exposed at a break in the scale acts as the other electrode. Because of the inherent potential difference existing between mill scale ( $\text{Fe}_3\text{O}_4$ ) and iron, current flows naturally from the exposed iron through the electrolyte to the mill scale accompanied by corrosion of the exposed iron. This process continues until all the iron is consumed. In the right-hand figure, an auxiliary electrode (anode) is immersed in the same water or soil, and, by means of a battery, supplies current to the iron sufficient to balance out or exceed current leaving the iron surface. Once this is achieved, no current leaves the exposed iron surface; hence, no corrosion occurs, and the iron is said to be cathodically protected. In terms of the electrochemical theory of corrosion, it is said that the minimum external or impressed current for protection polarizes the potential of the mill scale to the equilibrium potential of the iron with respect to its environment. Therefore, the metal surface no longer contains areas of differing potentials, and for this reason corrosion currents cease.

### Cathodic Protection Applied

It is obvious that cathodic protection will work in almost any corrosive environment so long as sufficient current from the auxiliary electrode can reach the metal. In his original experiments, Davy proved to his own satisfaction that protection could *not* be obtained through the "thinnest stratum of air or the finest leaf of mica, or of dry paper; but the action . . . did not seem to be much impaired by the ordinary coating of oxide or rust; nor was it destroyed when the finest bibulous or silver paper, as it is commonly called, was between them, being moistened

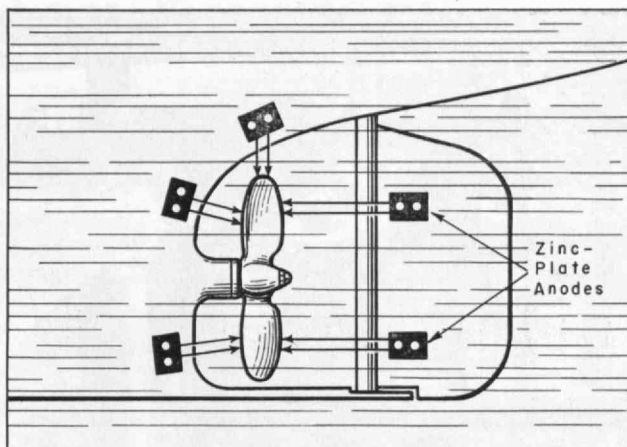


Fig. 5. Steel hull may be protected by sacrificial zinc plates (black) which are gradually consumed.

with sea water." In other words, only that metal in contact with a conducting solution is protected; metal above the water line corrodes as usual.

The greater the natural corrosion rate, the more current must be supplied to overcome corrosion. A steel tank containing hot pickling acid may require 35 amperes per square foot of steel surface, but marine piling may require only two to three milliamperes per square foot, and a buried pipe perhaps one to 10 milliamperes per square foot. The precise current required depends on many variables, and is usually determined at the time cathodic protection is installed and is often checked at periodic intervals thereafter to assure proper performance.

In practice, current is supplied by means of a generator or from a rectifier. Or the method proposed by Davy can be applied using a metal more active, electrochemically speaking, than the metal to be protected. For instance, iron can be used to protect copper as Davy found in his experiments, because copper is a more noble metal than iron, the combination in sea water forming a galvanic cell which supplies its own current. Similarly, zinc or magnesium can be used to protect iron and steel. Magnesium is more active than zinc; furthermore, it maintains current over a longer period of time in many environments, so that it is presently used more than zinc or other metals proposed for this purpose.

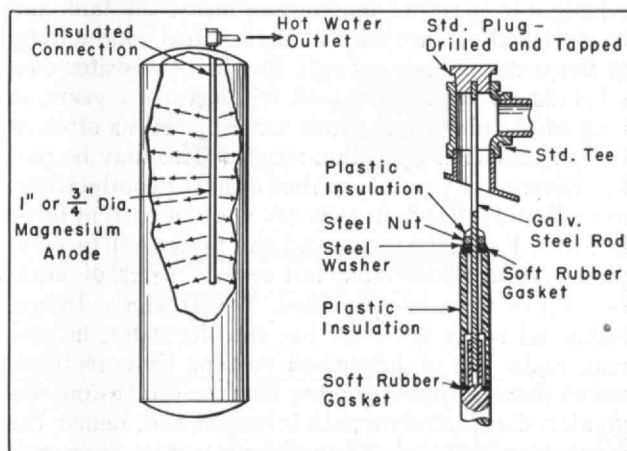


Fig. 6. Cathodic protection of domestic water tank, using magnesium anode.





Fig. 7. Cathodic protection of pipe line is illustrated in this half-tone. Here an anode is being lowered into a hole partially filled with prepared backfill, to retard corrosion of the pipe line entering the ground at the right.

The Dow Chemical Company

To protect a buried pipe line, therefore, one merely connects the negative pole of a rectifier or generator to the pipe, and the positive pole to an auxiliary electrode, thereafter regulating the impressed current to its proper value (Fig. 2). Or one or more cylindrical blocks of cast magnesium can be attached to the pipe through an insulated copper cable. The number of these so-called sacrificial anodes of magnesium depends upon the electric resistivity of the soil and the area of steel to be protected. Each magnesium anode, usually weighing 15 pounds or more, must be replaced about every one to 10 years depending on the current it is called upon to supply. Magnesium anodes are used especially where a power line is not available, since they are essentially a source of portable power, each pound of magnesium being equivalent to approximately 500 to 600 available ampere-hours. They are also often used because of the simplicity of installation and the minimum requirements for inspection and maintenance thereafter.

Domestic hot-water tanks can be protected by inserting a long rod of magnesium inside the tank and in electrical contact with it. If electrical conductivity of the water is high enough, as when the water contains dissolved salts, the tank will last many years, so long as the magnesium rods are replaced as often as the conditions of operation require. This may be perhaps every five years. In waters of lower conductivity, as in New England, usually not enough current flows between the magnesium and the tank wall to completely protect the tank, but several years of additional life may be provided, nevertheless. Larger industrial water tanks for hot or cold water, in general, make use of impressed current from rectifiers rather than sacrificial anodes, because dimensions are greater, the electrolyte path is longer, and, hence, the required voltage to obtain the protective current is correspondingly higher than that provided by the magnesium-iron galvanic cell.

The proper value of current for any installation is checked by measuring the potential of the protected structure with respect to a standard half cell. For example, the potential of protected iron or steel must usually be at least 0.85 volt with respect to a copper-saturated copper sulfate reference cell. Sometimes, indicator papers sensitive to iron salts or weighed iron coupons are attached to a buried pipe or tank to indicate the extent of protection.

When a buried pipe line or buried tank is protected using impressed current, the auxiliary anode is usually of scrap iron or carbon. Scrap iron corrodes in proportion to the impressed current, but the iron ground bed, so called, is readily replaced at little expense. With graphite or carbon, a somewhat higher voltage is required in order to persuade gaseous electrolysis products to release themselves at the electrode surface; hence, more energy is required with their use than with iron, but the electrodes last perhaps 10 times longer. In sea water, electrodes of iron, graphite, or noble metals are used. In fresh water, iron or aluminum are satisfactory for many applications.

It is common practice today to apply a nonconducting coating to the protected structure in addition to cathodic protection. In this way, current requirements are reduced to a minimum, and distribution of the protective current is automatic to defects in the coating, precisely where corrosion occurs. This makes it possible in some soils for one magnesium anode to protect as much as five miles of buried pipe line, whereas in absence of a coating, perhaps only 10 to 100 feet of line would be protected. It is this factor that has helped make the economics of cathodic protection so attractive to pipe line and oil companies who are responsible for about 800,000 miles of buried pipe within oil producing areas and for distribution of gas and oil to all parts of the country. The freedom of cathodically protected pipe from leaks and general

(Continued on page 288)

# A New Line for Surgery

## Study of the Fundamental Properties of Proteins

### Improves Quality of Surgical Sutures

By IRWIN W. SIZER

THE story of the creation in Genesis tells us that "... the Lord God caused a deep sleep to fall upon Adam, and he slept: and he took one of his ribs and closed up the flesh instead thereof;"\* Thus it appears that the closure of wounds has interested man from time immemorial. The use of ligatures for the control of bleeding is an ancient art which was practiced in Egypt and Assyria at least 4,000 years ago. Led by Hippocrates, the Father of Medicine, the Greeks appreciated the use of sutures for sewing together the edges of wounds, in order to facilitate healing and to minimize infection which would probably occur.

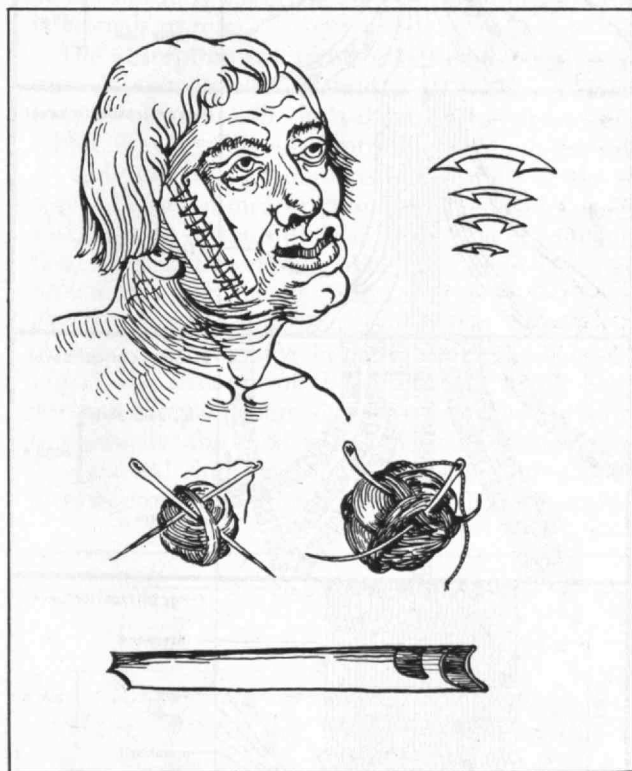
Early in the history of civilization, suturing was performed with an ordinary needle and thread of cotton or silk. But the need for an absorbable ligature for use in deep surgery seems to have become evident by the beginning of the Christian Era. Certainly the writings of Galen (131-201 A.D.) indicate that he and other surgeons of the Roman Empire used dried gut for this purpose because of its strength and absorbability. For centuries, musical instruments had been made with strings of gut so that Rhazes, eminent Persian surgeon and musician of about 800 A.D., found it both natural and convenient to use the same material for mending his stringed instruments as sufficed for the repair of abdominal wounds. For more than a millennium thereafter, fiddle strings were as much a part of the tools of the musician as of the practitioner of medicine, as a Sixteenth-Century textbook on medicine reveals (Fig. 1). In fact, it was not until the latter part of the Nineteenth Century that surgical catgut replaced strings of musical instruments for medical use.

During the Twentieth Century major strides have been made in the science and technology of suture design for specific surgical requirements, and suitable materials have been selected and manufactured for sewing particular tissues together. In general, nonabsorbable sutures are used for stitching together layers of skin. Silk and cotton are the most commonly used materials for this purpose, although there is some use for wire sutures of stainless steel or tantalum, as well as for plastic threads of nylon or other materials. Catgut is commonly used for suturing deep incisions because such a suture will disappear as a result of absorption after the wound has healed. Recent progress in the manufacture of catgut has resulted in the production of a highly purified, extremely strong, suture whose rate of absorption can be made rapid or slow to suit the surgeon's require-

\* Genesis 2:21

ments. In a very real sense, therefore, it is now possible to obtain a suture to suit your incision.

Contrary to popular belief, catgut is not obtained from cats (although cats might be a suitable source of supply) but is made from the small intestine of sheep. Although ancient surgeons employed crude gut for sutures, modern chemistry and technology have made possible a much superior product — using only the purified connective tissue fraction of the intestine. Mechanical treatments, such as slitting the gut into ribbons and crushing and scraping off undesirable portions (for example, the glandular mucosa, the outermost mesenteric coating, the serosa, and the inner layers of muscle, or the *muscularis*), are employed to leave the desirable connective tissue, the submucosa, from which catgut is made. Further purification of the tissue is accomplished by additional mechanical manipulation interspersed with such chemical treatment as extraction with water, dilute alkali, or other solvents. The submucosal ribbons thus prepared con-



New York Academy of Medicine

Fig. 1. Suture of face, from textbook published about 1500. Skin clips, balls of surgical thread, needles, and finger rest used in suturing are shown.



sist of the protein, collagen, which is about 90 per cent pure. The ribbons are tanned with chromium salts to produce chrome sutures which will be slowly absorbed, but no tanning is necessary in making plain sutures which will be rapidly absorbed. Several ribbons are then twisted together, stretched, and slowly dried under tension to impart high tensile strength to the completed suture. When dry, sutures are polished to appropriate size, after which they are heat sterilized and packaged in a nonaqueous solvent, ready for use in the operating room.

From the chemical point of view, catgut consists of almost pure collagen, the fibrous connective tissue protein of great strength which is the major constituent of skin, leather, and tendons. When partially degraded, catgut is converted into glue, and when more extensively hydrolyzed, yields gelatin. Gelatin, in turn, can be broken down into a variety of amino acids which are the building blocks of proteins. The amino acid content of collagen is quite unusual; sulfur-containing amino acids (such as methionine and cystine) and the benzene derivatives (phenylalanine, tyrosine, and tryptophan) are either absent or present only in small amounts, whereas the imino acids (proline and hydroxyproline) and glycine are present in surprising abundance. This unusual composition of amino acids makes collagen or gelatin a poorly balanced food, but apparently it also accounts for the

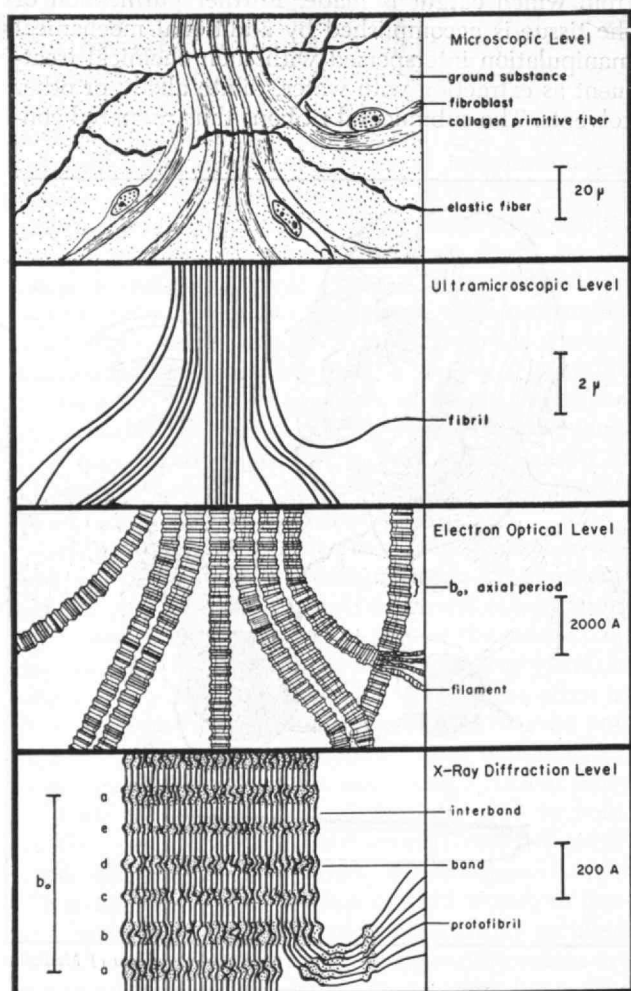
low antigenic properties of collagen compared to the high allergic response produced by other proteins when introduced into the body. The very slight antigenicity of collagen is of paramount importance since it is the primary reason why only minimum irritation occurs when sheep gut is embedded in human tissue.

Ancient nomadic man of the Paleolithic era took advantage of the great strength of sinews by employing them for bow strings in hunting with primitive bow and arrow. With a breaking stress of 60,000 to 70,000 pounds per square inch, modern catgut is about as strong as steel. The physical and chemical properties of catgut are a considerable asset in surgery. Initially the suture is much stronger than necessary to hold cut tissue together. During the healing of the incision, however, catgut sutures are absorbed due to the action of digestive enzymes in the blood, and slowly lose strength until completely absorbed.

At the beginning of World War II, it seemed unlikely that the usual sources of natural catgut would be adequate to meet civilian and military requirements simultaneously. The Department of Biology at the Institute therefore initiated an intensive study of collagen obtained from beef heel tendons and hides, with the hope that an extruded synthetic absorbable surgical suture might be prepared as a satisfactory substitute for natural catgut. Sufficient success was achieved in this program so that by the end of World War II, fairly satisfactory sutures were being produced in the laboratory.

In the preparation of synthetic collagen sutures, fresh beef tendon was finely minced in dilute acetic acid. It was then freed from impurities by filtration and precipitation, and finally suspended as a uniform gel in a dilute solution of an organic acid. The gel was then extruded, as a fiber of 40 individual filaments, into a precipitating bath of acetone and an organic base. After spinning, the fibers were washed, chrome-tanned if required, stretched, dried, and sterilized with heat. Such synthetic sutures compared very favorably with natural catgut in every respect except that they were only about 75 per cent as strong as the natural product. With the conclusion of World War II, the heavy demand for catgut disappeared, and the applied aspect of the collagen research program was terminated. Many of the scientists in this research program feel that it is by no means impossible to obtain a synthetic, absorbable, collagen suture (from beef tendon) which is as good as, or even superior to, natural catgut.

From the beginning of this research, members of the Faculty of the Department of Biology were concerned with the broader problem of studying the fundamental properties of the unusual collagen protein rather than confining their interest to the production of surgical sutures. For example, Professor Francis O. Schmitt, Head of the Biology Department, and Cecil E. Hall, '48, Associate Professor of Biophysics, were concerned with problems of ultrastructure of collagen as revealed by the electron microscope. At the same time, Professor Richard S. Bear was approaching the identical problem of molecular structure by x-ray diffraction techniques. David F. Waugh, Associate Professor of Physical Biology, studied the properties of collagen as revealed by physical chemical methods,



R. S. Bear, *Adv. in Protein Chem.* 7:69 (1952)

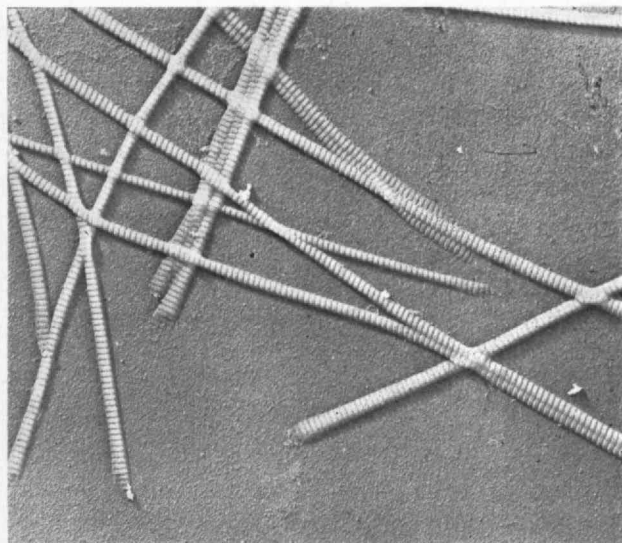
Fig. 2. Diagrammatic representation of collagen fibers as seen at different magnifications.

while Bernard S. Gould, '32, Associate Professor of Biochemistry, was concerned with biochemical studies of collagen. The writer was interested in the cleavage of peptide linkages in the collagen molecule by biocatalysts, the proteolytic enzymes; this action was studied in the test tube, using enzymes from the digestive track and elsewhere, and in rabbits and frogs—letting the enzymes of living tissue break down the collagen.

These studies at M.I.T. have revealed a hierarchy of structure as the primitive collagen fiber of connective tissues is viewed through progressively more powerful magnifying devices (Fig. 2). The native collagen fiber, seen with the ordinary light microscope, is shown by the ultramicroscope to consist of many fibrils. The electron microscope and the x-ray diffraction apparatus indicate the fibrils to be made up of bundles of filaments, each filament having a banded appearance like a zebra, with the cross-striations about 640 angstroms apart (Fig. 3). The fibrils, according to x-ray data, are made of protofibrils which are deduced to consist of polypeptide chains of amino acids linked together, head to tail, and arranged in a spiral staircase, or helix, (Fig. 4) along the protofibril. When collagen is tanned with tannic acid or chrome salts, to form leather or catgut characterized by slow absorption, it is believed that the tanning agent is attached to reactive chemical groups of two adjacent polypeptide chains, and in this manner holds together the protofibrils and inhibits their disruption by water, heat, and enzymes.

The breakdown of the collagen molecule is a very "hard nut to crack" by both the chemist, who has to resort to treatment with boiling acid for many hours, and by the biologist, who has to search through both the animal and plant kingdom to turn up a very few enzymes capable of slowly attacking native collagen under physiological conditions. Successful in this respect in the test tube are the proteolytic enzymes, pepsin from the stomach and collagenase from *Clostridium* bacteria of the food-poisoning group. When the collagen fibril undergoes heat contracture, it becomes digestible by practically all proteolytic enzymes. The same is true of collagen reconstituted from an acidic solution. For this reason, untanned synthetic collagen sutures are more rapidly absorbed in the body than catgut. Tanning, however, makes the synthetic and natural sutures comparable with reference to digestibility in enzymes and absorbability in tissues.

The problem of studying the digestion by enzymes of collagen fibers or catgut sutures can be approached in a number of ways. For example, one might use as criteria of digestion the release of amino acids, or acidic carboxyl groups or basic amino groups, or the decrease in weight or of strength of the fiber as it is digested by the enzymes. When the digestion of sutures is investigated by the last two methods, results such as those shown in Fig. 5 are obtained, using trypsin from the pancreas as the proteolytic enzyme. It is interesting to note that during digestion the strength of the suture decreases much more rapidly than the weight. The surgeon is most interested in the decrease in strength of a suture as it is digested by tissue enzymes. For this reason a modification of

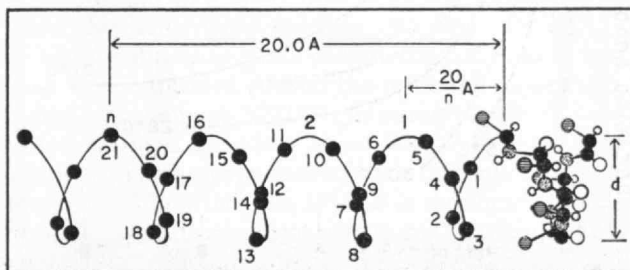


F. O. Schmitt and J. Gross

Fig. 3. Collagen fibers stained and photographed with electron microscope.

the strength test is currently used by all suture manufacturers in their routine assay of catgut with enzymes. In this method an ordinary lead fishing sinker is attached to the end of the suture and suspended in a test tube containing the enzyme (pepsin, trypsin, or papain). When the suture is sufficiently digested, it breaks, the weight drops to the bottom of the tube, and the digestion time in hours is automatically recorded by a timing device. When such variables as enzyme concentration, temperature and acidity of the solution are carefully controlled, the digestion time of the suture is closely related to its absorption time in animals or man.

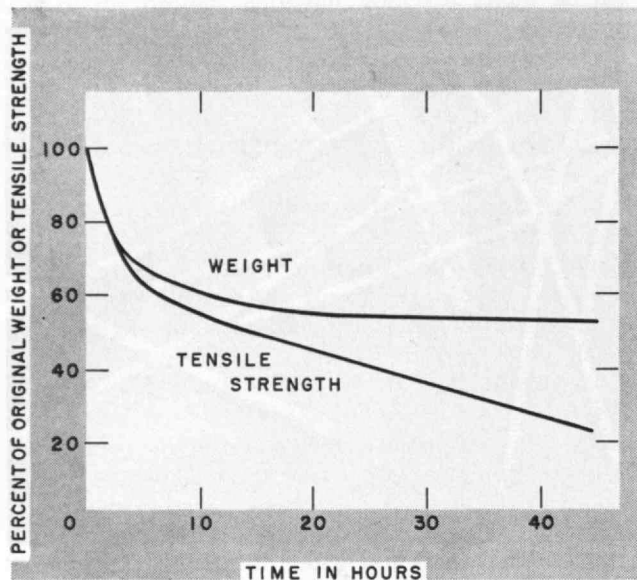
The absorption of catgut or synthetic collagen sutures in animals can be studied by inserting several lengths of suture in the subcutaneous tissues of a rabbit, leaving the ends protruding through the skin. At daily intervals a sample is pulled out and the extent of digestion measured by studying loss in weight and strength of the suture as a function of implantation time in the rabbit. Weight change of catgut proves an unsatisfactory index of absorption for, unlike the enzyme digestion, the weight remains unchanged for many days in the rabbit. As indicated in Fig. 6, the strength of the suture is a much better criterion since it progressively decreases as the suture is gradually absorbed over a period of many days. The general similarity of the digestion curve of sutures in enzyme solutions (Fig. 5), and the absorption



R. S. Bear, Adv. in Protein Chem. 7:69 (1952)

Fig. 4. Helical model for the collagen polypeptide chain (protofibril). The amino acids are linked head to tail along this chain.



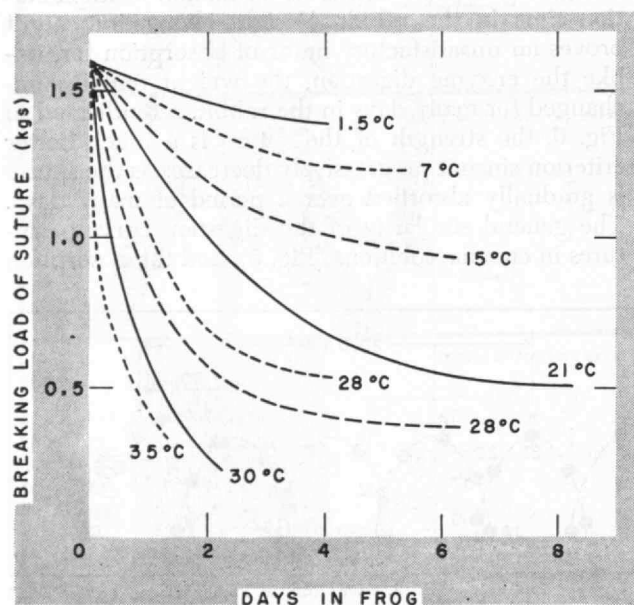


I. W. Sizer, *Enzymologia*, 13:293 (1949)

Fig. 5. Digestion of a collagen suture in trypsin from the pancreas. As hydrolysis proceeds, the suture gradually becomes weaker and lighter.

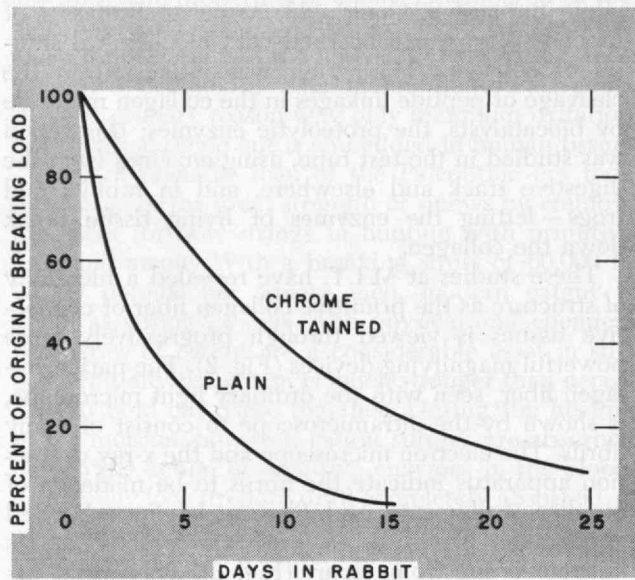
curve of sutures in animals (Figs. 6 and 7), suggests that the two phenomena are fundamentally similar. Once a quantitative relationship has been worked out, it is possible to assay a suture for absorbability by an experiment of a few hours' duration in an enzyme solution, as compared with animal assay which might take several weeks.

Although enzyme assay can be correlated with rate of suture absorption in a healthy person, the rate of absorption may be much greater in a very sick individual. Bacteria which infect a wound may themselves liberate digestive enzymes and call forth an accumulation of white blood cells which also produce enzymes capable of digesting collagen. In addition, a person who has recently undergone surgery is likely to run a fever which may be several degrees above normal body temperature. How will this affect the



I. W. Sizer, *Annals of Surgery*, 121:231 (1945)

Fig. 7. Absorption of collagen sutures in frogs at different temperatures as measured by loss in strength.



B. S. Gould and I. W. Sizer

Fig. 6. Absorption of catgut in a rabbit as measured by loss in strength. The upper curve is for a chrome-tanned, the lower for a plain suture.

rate of suture absorption? Experiments with enzymes indicate an increase of temperature of only four degrees C. will produce a 100 per cent increase in the rate of digestion of a suture. The effect of temperature is not easily checked with a warm-blooded rabbit, but with the frog, whose temperature is always that of the environment, this experiment at different temperatures is possible. It was found that subcutaneous sutures are absorbed extremely slowly by a frog swimming in ice water (Fig. 7), while at body temperature (37 degrees C.) absorption occurs with great rapidity. If people behave like frogs (they often do) a fever of seven degrees C. will produce a 100 per cent increase in the rate of suture absorption.

Although catgut is the most widely used type of suture and is the only absorbable one available, it is not always completely uniform, sometimes produces a mild tissue reaction, and is expensive to produce. For this reason, medical research is vitally concerned with finding a substitute with all the desirable, and none of the objectionable, properties of catgut. We have already discussed the encouraging results obtained by the M.I.T. group which used beef tendon collagen for an absorbable extruded suture. Work with other synthetic protein fibers (for example, Aralac, Vicara) is not very promising since many of them are too weak and irritating to human tissues. Sutures from synthetic high polymers (for example, nylon, Dacron, Orlon, Dynel) are often very strong, show little tissue irritation, and may have most of the properties desirable in a suture except digestibility in enzyme solutions and absorbability in human tissues. It appears that the chemist will have to learn to build up high polymer filaments using bonds for which enzymes are specific. Such synthetic plastics may prove to be of great interest to the chemist and the enzymologist, since they may find other medical and biological uses in addition to that of absorbable surgical sutures.

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# Chemical Warfare

*Even with the Newest Developments in Nerve Gases,  
Public Enlightenment and Adequate Preparedness  
Are Major Factors in Combating Chemical Warfare*

By JAMES A. TOBEY

CHEMICAL warfare is often thought to be one of the newer and more fiendish instruments of man's consistent inhumanity to man. Actually it is almost as old as is the art of war itself; certainly as used in the past it has been no more inhumane than bullets, bayonets, and bombs. The future career of chemical warfare could, however, be something else again.

Five centuries before Christ, in the Peloponnesian War between Sparta and Athens, chemical warfare was employed in the form of burning sulfur and pitch. Throughout classic and medieval times a favorite weapon of armies was Greek fire, a hellish and highly combustible mixture of sulfur, pitch, and naphtha, with later fiery additions of quicklime, saltpeter, antimony, and turpentine. This hot stuff was the remote ancestor of the modern flame thrower.

The first effective use of chemical agents in modern warfare occurred on April 22, 1915. Previously, the Germans had attempted on two or three occasions to employ this illegal and outlawed method of warfare, but they had been ineffectual. At this time, in the spring of 1915, fighting on the Western Front had reached a complete deadlock of trench warfare. The desperate Germans sought, therefore, to achieve a more advantageous mobile situation by means of poison gas. They almost succeeded.

In the late afternoon, on April 22, the troops of the French Colonial and Territorial Divisions on a four-mile front at Langemarck, beyond Ypres, in Belgium, were startled to see approaching them a dense cloud of yellowish vapor, while at the same moment all the German artillery opened up with a frightful barrage. When this yellow acrid vapor reached the trenches, it caused terrible coughing, crying, sneezing, and burning among the surprised soldiers. The superstitious African troops promptly abandoned the front and withdrew in panic to a canal several miles in the rear.

Only darkness and valiant counterattacks by the Canadians, who held the adjacent sector, saved the day for the Allies. If the Germans had not been too stupid and inept to realize how effective this first gas attack had been, and had followed up their advantage, the whole course of World War I might have been different.

About two days later, the Canadians received their baptism of poison gas. Again the yellow cloud approached, this time at 4:00 A.M., when the wind was favorable to the enemy. Despite a complete lack of protection against this new and horrible weapon, the tough and brave Canadians held fast for a time, but

finally were compelled to fall back. An unconventional method of warfare had won a large salient for the Germans, but they soon discovered that poison gas could not win their battles for them.

This first chemical agent was chlorine, released from cylinders. The Allies did not retaliate until September of 1915, when the British loosed chlorine from cylinders at the front at Loos. By 1916 the French had developed a gas shell which was much more effective than the use of cylinders, not only because it could be projected from batteries of mortars, but also because it contained a new and more deadly substance, phosgene, or carbonyl chloride, which at first was mixed with chlorine but later was employed alone. By this time the Germans had discovered that poison gas was a two-edged sword, since most of the prevailing winds on the Western Front favored the Allies. It was disconcerting to release gas and have it blow back in your own face.

From that time on, in World War I, poison gases and liquids were continuously utilized on all fronts. In July of 1917 the inventive and resourceful Germans came out with two new and better chemical agents, mustard or dichlorodiethyl sulfide, and another vesicant containing an organic compound of arsenic, diphenylchlorarsine. The British promptly countered these with lewisite, or chlorovinylchlorarsine, which was then thought to be highly effective and probably was, but is no longer in current favor.

Mustard, unlike the chlorine and phosgene which blew away from the battlefield in about 10 minutes, was a persistent gas which lingered for a long time on the ground, in trenches and foxholes, and upon clothing. Not only that, it was also difficult to detect. Most forms of this gas were colorless and almost odorless, except for a faint garlic scent, and the reaction was delayed. No sensation occurred immediately after exposure, but in a short time the eyes, the skin, and often the lungs were severely attacked.

All of the poison gases caused casualties in World War I, but mustard caused the most. There are estimated to have been 800,000 gas casualties on all sides in this conflict, including about 70,500 among American troops, who experienced their first gas attack on the night of February 25, 1918. It is significant to note however, that deaths from poison gas were only 2 per cent of the afflicted, a figure far below the mortality from bullets, shrapnel, and bayonets.

Aside from running away, the only protection against poison gas in those early days was a respirator. At first it was a makeshift device consisting merely



of a pad of cotton waste soaked in sodium carbonate and/or sodium thiosulfate, which was tied over the mouth. Later came a flannel helmet dipped in an appropriate solution, and finally the somewhat unwieldy manufactured gas mask, which fitted tightly over the face and had a breathing tube attached to a canister filled with activated charcoal and other substances to filter out the noxious gases. Among my most vivid recollections is my own first experience in 1918 with one of these contraptions. After I had donned the mask with great speed and skill, it refused to admit any air whatsoever. By frantic shaking and pounding of the canister and tube, I managed to get the thing working feebly, and thus was saved from suffocation.

A more compact and more efficient gas mask was standard equipment for all American soldiers in World War II, along with impermeable clothing and special aid kits, but these were never used for their intended purposes. Whenever the going got rough for the foot soldier, the first thing he threw away was his gas mask, which might have been lifesaving. The Germans had gas, including some new and extremely potent agents, but they never employed them. It was not humanity which deterred, but the knowledge that the United Nations had more and better chemical warfare agents and that retaliation would be terrible and perhaps decisive. Those agents are still available.

During World War II the British developed a useful antidote for the vesicant gases, a substance known as BAL, or British Anti-Lewisite. This chemical, 2, 3 dimercaptopropanol, is also effective against mustard, and is now supplied to troops in a Protective Ointment Kit, with full directions for its proper application. Although chemical warfare was not indulged in during the late conflict, much research was conducted and much progress was made.

So much for the past. What about the present and future? All of the really efficacious poison gases and liquids which were used as long ago as World War I are still current in chemical warfare, often with cer-

tain devilish refinements. The lung irritants, chlorine and chloropicrin, are now considered to be passé, but phosgene is very much in the picture. Mustard and the newer nitrogen mustards are available, either for use straight or mixed with other vesicant or blister gases, such as the organic dichlorarsines. Then there are sternutators, or vomiting gases, such as adamsite (diphenylchlorarsine) which make the victim release his gas mask to vomit and thus expose him to other baleful fumes. There are also lachrymators, or tear gases, such as chloracetophenone; incendiary gases, such as thermite; and smoke screens, continuous and large doses of which may cause temporary illness.

Also available are certain systemic poisons, such as hydrocyanic acid (prussic acid) and cyanogen chloride, which have the disadvantage that they kill too quickly when dispensed in high concentrations. It is better military strategy to cause severe and lengthy disability and crippling.

Last, but not least, we have the so-called nerve gases. From the physiological, psychological, and military standpoints, these nerve gases are by far the worst of the lot. They were developed by the Germans during World War II and are now in our possession as well as in that of our enemies. They are the chemical agents which are most likely to be utilized in another world war, if we are so unfortunate as to have one, and they are likely to be employed against our large population centers as well as against the military forces. Today these nerve gases could be launched from aircraft and submarines, or by rockets, artillery, mortars, and bombs. They are, in fact, the most effective and most toxic agents for long-range chemical attack, either independently or in conjunction with atomic and biological warfare.\*

The precise formulas of the several nerve gases have not been published, possibly for reasons of military security, but their effects are known and proper methods for their prevention, control, and treatment are understood. These highly toxic substances actually are light brown liquids which give off vapors on evaporation; the effects may be due either to these vapors or the liquid itself. Some of these nerve gases are odorless, while others have a very faint sweetish, fruity odor; some are nonpersistent, that is, are dissipated quickly in the atmosphere, while others are persistent and linger in the attack area for hours or even for days.

All of the nerve gases, whether in liquid or vapor form, are quickly and readily absorbed by the body through the skin, the eyes, the respiratory tract, and the gastrointestinal tract. High dosages cause ills resembling those of

\* James A. Tobey, "Biological Warfare," *The Technology Review*, 55:31 (November, 1952).



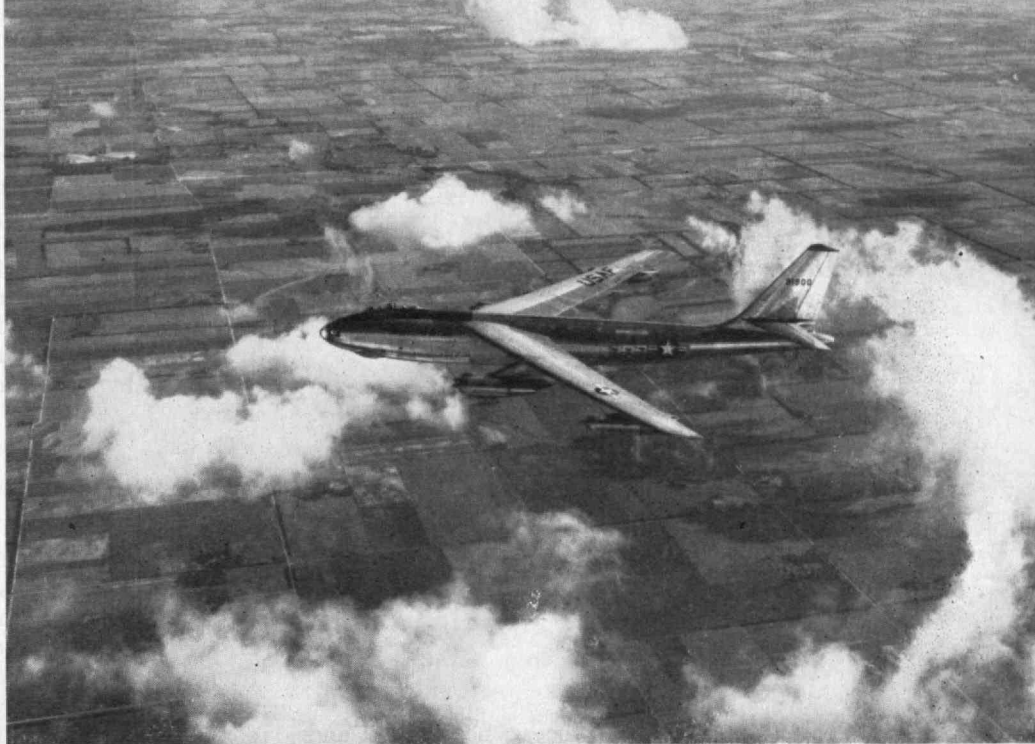
poisoning with pure nicotine or the muscarine from deadly mushrooms; symptoms are described in medical reports as similar to, but more prolonged than, poisoning with physostigmine, the alkaloid of the Calabar bean of tropical Africa, which in proper amounts has certain legitimate uses in medical treatment. What happens is that the nerve gas causes inactivation of a necessary enzyme in the body, cholinesterase, and thus permits overproduction of the acetyl choline which reacts unfavorably upon nerves and smooth muscles.

The first symptoms from any of the above-mentioned forms of poisoning, including the nerve gases, consist of an immediate feeling of tightness in the chest, with difficulty in breathing, severe constriction of the pupils of the eye (miosis), dimness of vision, and a drawing or pain in the eyes. If the gas mask is put on at once when these relatively mild symptoms are manifest, these harassing signs may give trouble for only a few days and there is no real casualty. At the same time the skin can be protected by impermeable clothing, but the liquid nerve gases will easily penetrate ordinary clothing and impregnated permeable clothing, and will slowly penetrate rubber. These gases will also contaminate water and foods, except those in sealed cans.

Aggravated symptoms will, of course, occur when much more than minimal doses of the nerve gases are inhaled or the skin is continuously contaminated. In such cases there is even greater difficulty in breathing, dimness of vision, headache and pain, cough, running nose, and various other troubles. In severe cases, the victim displays cyanosis, or a bluish color of the body surface due to insufficient oxygen in the blood, and he is afflicted with tremors, convulsions, paralysis and, finally, death—unless heroic treatment measures are instituted.

Psychologically, the effects of these severe casualties of the nerve gases are terrifying and conducive to panic. The sight of men writhing with contorted features, gasping for breath, with massive salivation, incontinence, retching, and blue in the face will have a disastrous effect on the most hardened and battle-experienced soldiers. The panic among civilians would be terrible, especially in the highly neurotic segments of our large cities.

There are, nevertheless, efficacious measures which can be taken in the early stages of such a nerve gas attack. Injections of atropine, supplied in a Protective Ointment Kit, will neutralize the effects of the gas on the eyes and lungs, while the skin can, and must, be quickly decontaminated with mild alkaline solutions. Atropine, carefully administered, will usually restore breathing ability, but in extreme cases, artificial res-



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piration by the newer methods may be necessary. Complete directions for the treatment of nerve-gas casualties are given in a pamphlet issued jointly by the Army, Navy, and Air Force, but this booklet is intended primarily for physicians and aid men. Doctors who work on severe cases must wear masks and protective rubber gloves and aprons, frequently changed.

Useful information for the laity on the nerve gases is given in the booklet entitled, *Health Services and Special Weapons Defense*, issued by the Federal Civil Defense Administration, Washington, D.C., in December, 1950. This valuable pamphlet covers the whole field of health protection and medical care in the event of atomic, chemical, or biological attack. It has been distributed to local civil defense organizations, all of whom must have on their staffs experts on chemical warfare defense, such as qualified physicians, chemists, or engineers.

Unfortunately, the nerve gases cannot at present be detected by any means except the sudden development of clinical symptoms in those exposed. If their use is attempted by a barbaric enemy, the first line of defense is obviously military, or prevention and interception of the attack. If such an attack should succeed, immediate action by alert soldiers and civilians can do much to minimize the effects. This is one of the many instances where knowledge, supplemented by training, is power.

Chemical warfare utilizing these newer nerve gases, atomic warfare employing A-bombs or H-bombs, and biological warfare using pathogens are not pleasant things to contemplate, but they are realities or potentialities which have to be faced in this disturbed modern era. While they are fearful, they are no worse than some of the other disasters this world has had to cope with in the past, and will have to cope with again. They should not engender undue fear or anxiety, but a determination to meet and overcome these calamities if they should occur.



# The Education of TOM, DICK, AND HARRY

*An Industrial Engineer Comments on  
the Technical Training of Students  
Having Different Aptitudes*

By ARAM BOYAJIAN

EDUCATION is a lifelong process; never fully and completely attained, never finished, never final. In no two individuals is it ever quite the same, for the best education involves both academic training and the informal schooling of experience, combined with mental disciplines of infinite variety. Such variegated possibilities exist that the saying, "There is no royal road to learning," has become axiomatic. A man *can* become educated without formal schooling, and the accumulation of degrees does not necessarily guarantee that the recipient is either cultured or learned.

But even though education is a matter of personal effort, it need not be — and indeed should not be — a matter of isolated effort. In contributing to these experiences and mental disciplines which mark a truly educated person, formal training in academic institutions can increase immeasurably the effectiveness of an individual's private efforts. By itself, a school or college cannot educate a man, but it can be of tremendous value in making his own efforts at self-education easier and more effective. It is desirable, therefore, that educational institutions be maintained and operated on such a basis as will enable them to maximize their contributions. Toward this end it may be desirable to make modifications in our educational system, from time to time, as the changing conditions of society appear to require.

This paper suggests a somewhat different emphasis in engineering education than has been customary in the past. Whereas engineering training is usually classified as to civil, mechanical, electrical, or chemical engineering, the point of view developed here suggests a classification which more nearly meets the temperament and employment probabilities of professional engineers. The suggested classification, in the fields of (1) manufacturing engineering, (2) developmental engineering, and (3) application engineering, gives greater unity and interest to the student's studies, and enables his instructor to maintain a better perspective on the engineering curriculum or option as a whole.

To outline the merits of the proposed classification in as painless a manner as possible, use will be made of a composite life story. The dramatis personae are real live people, but in the following story, they will bear the hypothetical names of Tom, Dick, and Harry.

## Tom

Tom's parents had observed very early that their young son had an unusual interest in mechanical devices. "He takes his toys apart to see what makes them go, and tests them to destruction," they said. His grandfather observed that Tom was always trying to fit things together, and he wagered emphatically that Tom would grow up to be a great engineer. As the old man was an engineer, his opinion in this matter was considered authoritative.

Tom was spoiled. Any instrument he fancied was bought for him. Long before he could obtain a driving license, he had a jalopy. "Have to learn how the engine runs, and how to take care of it to justify a license," he argued. Of a gregarious nature, he did not let studies interfere with "social obligations," as he expressed it.

When grandfather arrived for Tom's high-school graduation, he found the family in a funereal mood. Tom had barely passed his studies, especially algebra and English, and because of his poor scholastic record, his entrance application had been unfavorably acted on by several colleges. More and more Tom talked about opening up an automobile repair shop. Tom's father was city solicitor and had always dreamed of a professional career for his son; and now that Tom could not enter college he was furious at Tom, at his mother, and especially at grandfather. Tom's father had said to his wife bitterly, "You and your father are responsible for spoiling Tom and for his early failure in life." With tears in her eyes, Tom's mother quoted those words to her father.

"Great Caesar! Tom's early failure in life!" grandfather exclaimed in derision. "Have you people lost your minds? I have planned and watched Tom's education for the past 17 years, and so far it is on schedule with an excellent record. This week we are going to celebrate his graduation from high school, and next week (maybe) his admission to a good engineering college. Have faith in Tom and your father, and wipe away your tears."

The day after the graduation celebration, grandfather took Tom with him to a famous aircraft engine factory. While grandfather visited with some of his friends from the Engineers' Club, Tom was taken around the plant on an inspection visit.

When Tom returned, he found his grandfather talking to one of the company's executives. Grandfather was obviously proud to introduce Tom. "So this is Tom," said the executive affably, shaking

Tom's hand. "You look fully as good as your grandfather implied. How would you like to work in our shops?"

"I'd pay you for the privilege. When may I start?"

"Don't let the union people hear you say an unorthodox thing like that! You may start anytime you please. You will receive union wages, and you should apply for union membership the first day."

At luncheon, in a quiet restaurant, grandfather listened to Tom's account of all the wonderful equipment, methods, processes, and products he had seen that morning.

"How would you like to be the manager of a factory like that, Tom?" asked the grandfather.

"O-o-h! How would I!" Tom's eyes bulged and shone. "Grandfather, your name would have to be Morgan for me to become the manager of a factory like that."

"Tom, the present manager got there by merit only. You can get a position like that when you qualify for it. In fact, you can even own a factory like that when you qualify to manage one."

"How does one prepare himself to qualify for it?" asked Tom eagerly.

"No two cases are exactly alike, but here is what I think would fit your case best. You will need both

scientific and practical training for it—in college, and in industry—a co-operative training. Let us list the training you need."

He reached for the restaurant's "Specials for Today" sheet on the table and started writing on its back:

"TRAINING FOR TOM IN MANUFACTURING ENGINEERING  
AND MANAGEMENT

In Industry In College Elsewhere"

In the "Industry" column he listed (each for a one-term period): *Apprentice Course*—drafting, machine shop practice, tool design; *Production Department*; *Wage Rate Studies*; *Cost Department*; (for a two-term period), *Manufacturing Methods and Plant Layout*.

How did Tom like these suggestions? "Just wonderful," said Tom.

"Mr. X has agreed to give you rotating assignments like these," said the grandfather.

In the "College" column, the old man listed tentatively a few subjects at a time: *physics, chemistry, thermodynamics, internal combustion engines*.

How did Tom like these subjects? "Just wonderful," said Tom.

Photo by Ellis O. Hinsey from Black Star





The old man then added: *hydraulics, machine design, industrial controls and instrumentation.*

How about these? "Just wonderful," said Tom.

The old man added some more subjects: *engineering metals, basic electricity, economics.*

What about these? "Just wonderful," said Tom.

The old man then added what he had been holding back: *analytic geometry and calculus.*

Tom did not say, "Just wonderful." He said, "I was hoping we could leave out math, Grandfather. Does a manufacturing engineer need calculus?"

"Tom," said the old man, "you may not need skill in calculus, but you would miss a lot if you had no understanding of the principles of calculus. You hate a fascinating subject like mathematics because you have not been properly taught. This summer you and I are going to have fun reviewing together algebra, geometry, and trigonometry with a peek at calculus to give you an idea of its fascination. So don't worry about mathematics. There are also a few so-called humanities or cultural subjects you should study in college, such as American government; history of the Western civilization; the impact of technology on society and the more powerful reaction of society to industry; the labor union movement; the forces that are breaking out as communism in some places, as nationalism elsewhere. Some people include also English literature in the humanities group. I think psychology, *human nature*, is one of the most cultural subjects. These matters bring us to the third column — 'Elsewhere' — the subjects that you should study perhaps in an evening school or with a tutor during your industry assignments. Let us make a tentative list of them."

Grandfather then jotted down for the "Elsewhere" column: *psychology, public speaking, writing, English literature, business law.*

"Public speaking and writing can be combined into one course advantageously by speaking and writing on the same subject. You find eight or 10 classmates at the factory, and I'll find the teacher for you. Now let us talk about college. Where do you want to go?"

"Grandfather, I should like to go to your Alma Mater; but they won't accept me on my school record."

"Well, perhaps not on your scholastic record, but I think they will on your total record and on what they consider as your potentialities. You have to sell yourself and your program, Tom, and you can do it. There is not any time to lose. Wire the dean for an appointment, and we shall discuss your sales approach later."

Much encouraged with his grandfather's confidence and help, Tom sent the following telegram:

To Dean . . .

WOULD APPRECIATE AN EARLY OPPORTUNITY TO DISCUSS AN EDUCATIONAL PROGRAM WITH YOU.

Tom . . .

Later in the day, Tom was elated to receive a telegraphic reply which read:

To Tom . . .

COME IN THURSDAY MORNING AT 11:30.

Dean . . .

When Tom arrived at the reception room, there were others still in the Dean's Office. As one student came out of the office, Tom caught a glimpse of a familiar grandfather clock with its hands pointing to 12:00 o'clock, although his watch showed 11:30. Seeing Tom's concern, the Dean's secretary explained that the clock had not run for years, but was kept as a college heirloom. The college had made efforts to have the clock fixed. In fact, several experts had tried to fix it and had given it up. They had urged that the clock be sent back to the factory for repair. Unfortunately, however, the factory had gone out of existence long ago.

As the campus clock struck twelve, the visitors in the Dean's Office left, and the secretary motioned Tom in for his interview.

"I can give you no more than 10 minutes," said the Dean, taking his watch from his pocket.

"Dean . . ., if you do not mind, I would prefer to wait until after lunch. I should like to fix that clock while you go to lunch," said Tom.

"You may not fool with that clock. It is an heirloom. Two experts gave it up."

"But Dean . . ., I know every gear and pinion in that clock. I can fix it. I fixed a duplicate of this same clock which my grandfather had picked up as junk in a secondhand store, and now it runs perfectly. I know the penalty if I claim and fail to fix this clock. Please, believe me that I won't hurt your clock. I can fix it."

The Dean yielded at length to Tom's self-assurance and pleading. "I will return at half-past one," he said and left.

Working fast with a few simple tools, Tom got the clock running. Then he set the chimes right. He was checking the rate of the clock — holding his watch to his left ear with one hand, and operating a hand counter with the other hand — when he heard the door open at his back. The Dean stopped abruptly with a wide smile on his face as he saw the clock running with strong rhythmic beats and the youthful Tom absorbed in his careful rate check.

When Tom arrived home, he found the family waiting breathlessly for news.

"Everything worked out very well," he announced with great exultation. "I had the best of luck. Grandfather, can you imagine the college having a clock just like yours, not running for years, given up by experts, just waiting to be fixed by me?"

"I couldn't imagine it, unless I had seen it with my own eyes," said the old man.

"Well, I could not believe it myself if I had not seen it," said Tom. Then as if a fog were lifting from his mind, Tom asked, "Grandfather, did you know of that clock?"

"Every alumnus knows of it."

"Grandfather, did you buy yours so that I would learn from it and then some day be able to fix the college clock?"

(Continued on page 280)

# THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

## Student Aid Center

**E**STABLISHMENT of a new Student Aid Center at the Institute has recently been announced by James R. Killian, Jr., '26, President. In making the announcement, Dr. Killian emphasized that the new office marks a significant step in the expanding program of student aid and student counseling.

"For the first time," he said, "all Institute resources devoted to scholarships, loans, and student employment will be concentrated in a single office. In this way we shall be able to manage our expanding scholarship and financial aid programs more effectively and to provide a more inclusive counseling service for students in need of financial assistance."

Thomas P. Pitre, Dean of Freshmen, has been named director of the new Center. Dean Pitre has been at M.I.T. since 1920, when he was appointed instructor in chemistry, and has been associated with the office of the Dean of Students since 1930. He was named Dean of Freshmen in 1946, and since 1951 has served as director of student aid and as chairman of the Faculty Committee on Student Aid.

The counseling services formerly rendered by Mr. Pitre as Dean of Freshmen will now be performed by the Institute's new Freshman Advisory Council. The Council, instituted by the M.I.T. Faculty at the start of the current year, is composed of members of the Faculty representing all departments at M.I.T.

William A. Carlisle, Jr., '28, will serve the new Center as manager of student personnel, a post which he has held since 1951. Richard W. Willard, '51, has been named assistant to the director of the Student Aid Center.

## Nominated for Office

**I**N accordance with the principles of a republican form of government, Technology Alumni will be called upon to cast ballots, this spring, for the election of new officers of the Alumni Association of M.I.T., into whose hands the administration of the Association will pass for the year beginning July 1, 1953. In ballots to go into the mails on March 25, Alumni will be called upon to elect a president and a vice-president of the Alumni Association; to select two members to serve on the Executive Committee; to choose three of their number to serve as members of the M.I.T. Corporation for five-year terms; and to appoint one Alumnus to complete the unexpired term of the late C. Adrian Sawyer, Jr., '02 on the M.I.T. Corporation.

Horatio L. Bond, '23, XV, Chief Engineer, National Fire Protection Association, has been nominated to succeed Edwin D. Ryer, '20, VI, to the presidency of the Alumni Association for one year.

The National Nominating Committee — composed of Raymond H. Blanchard, '17, chairman, John L. Porter, '00, Saxton W. Fletcher, '18, Walter R. C.

Russert, '18, Whitworth Ferguson, '22, Harold E. Koch, '22, Holland H. Houston, '24, George P. Edmonds, '26, Albert R. Pierce, Jr., '31, and George E. Colby, '32 — has nominated Richard S. Morse, '33, VI, as vice-president of the Association for a two-year term. Mr. Morse is president of the National Research Corporation and Vacuum Metals Corporation, Cambridge; a director of New Enterprises, Inc., and a

## PRESIDENTIAL NOMINEE



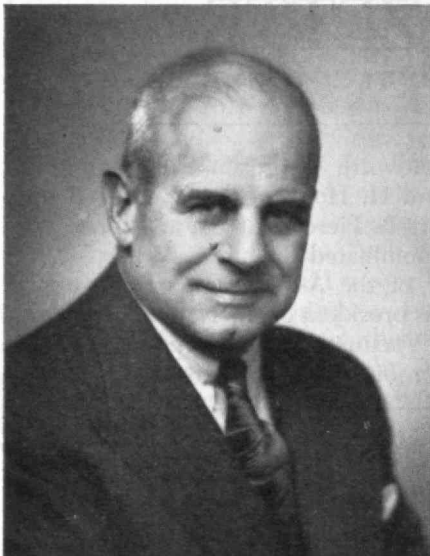
M.I.T. Photo

Horatio L. Bond, '23, XV, Chief Engineer, National Fire Protection Association, Boston, has been nominated to serve as president of the M.I.T. Alumni Association for the year beginning July 1, 1953. In alumni affairs, Mr. Bond was a vice-president of the Alumni Association, 1949-1951, and a former member of the Executive Committee. He is a member of the Alumni Fund Board, and of the Alumni Council, as well as secretary of the Class of 1923.

Professionally, Mr. Bond is serving as consultant to the United States Atomic Energy Commission, and is a member of the Governor's Defense Council for the Commonwealth of Massachusetts. He is a member of the Society of Fire Protection Engineers, and an honorary member of the (British) Institution of Fire Engineers. Books which Mr. Bond has written include: *Municipal Fire Administration*, published by the International City Managers' Association, and *A "First Book" on Fire Safety in the Atomic Age*, published by the National Fire Protection Association. Mr. Bond is also director and vice-president of the Hyannis Port Club.



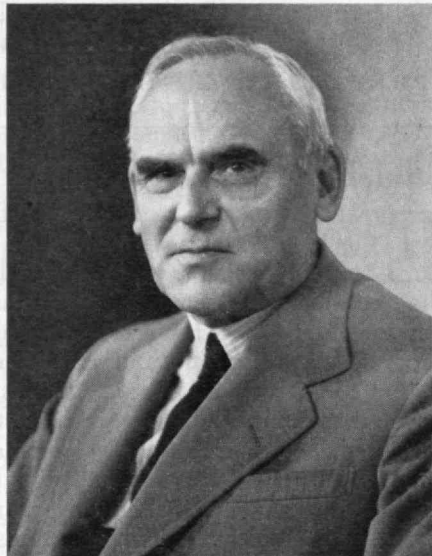
## NOMINATED TO SERVE ON THE M.I.T. CORPORATION



◀ **James H. Doolittle, '24, XVI**  
Vice-president and Director, Shell  
Oil Company, New York City

*Pach Bros., N.Y.*

**Clarence D. Howe, '07, I ▶**  
Minister of Trade and Commerce,  
and Minister of Defence Production,  
Canada



*National Film Board*



◀ **Edwin D. Ryer, '20, VI**  
Vice-president and Director, Bar-  
bour Stockwell Company, Cam-  
bridge

*Fabian Bachrach*

**R. C. Sprague, '23, XIII-A ▶**  
President, Sprague Electric Com-  
pany; President, Associated In-  
dustries of Massachusetts (To fill  
unexpired term of the late C. Adri-  
an Sawyer, Jr., '02)



*Fabian Bachrach*

trustee of the Museum of Science, Boston. He is a past member of the Visiting Committee on the Department of Physics. In alumni affairs, he is a member of the Alumni Fund Board, Class Representative on the Alumni Council, and a member of the Committee on Nominations for Departmental Visiting Committees.

Avery H. Stanton, '25, XV — Treasurer, Cummins Diesel of New England, Inc. — and Frederick B. Grant, '39, XV — trustee and investment adviser in Boston — have been named to the posts on the Executive Committee for two-year terms.

Nominated to serve for five-years as alumni term members of the M.I.T. Corporation are: the Right Honourable Clarence D. Howe, '07, I, Minister of Trade and Commerce, and Minister of Defence Production of Canada; Edwin D. Ryer, '20, VI, Vice-president and Director of Barbour Stockwell Company, Cambridge, and this year's President of the Alumni Association; James H. Doolittle, '24, XVI, Vice-president and Director of Shell Oil Company, New York City. In addition, Robert C. Sprague, '23,

XIII-A, President of the Sprague Electric Company, North Adams, Mass., has been nominated to serve for the two remaining years of the unexpired term of the late Mr. Sawyer.

With one to be elected from each district, new representatives on the National Nominating Committee are: *District 8* — Atlanta — Roger W. Allen, '27, VI; San Juan — C. S. Canals, '26, I; Tampa — Laurence P. Geer, '15, VII; Knoxville — Van Court M. Hare, Jr., '23, IV; Jacksonville — George W. Simons, Jr., '15, XI; Mexico — Augustin M. Valdes, '25, I; Nashville — James M. White, '28, XV; *District 9* — Duluth — Arthur C. Josephs, '28, I; St. Louis — Robert J. Joyce, '28, I; Minneapolis — Kenneth B. Lucas, '32, X; *District 10* — San Francisco — Richard L. Cheney, '27, I; Los Angeles — William H. Mac Callum, '24, XV; Portland, Ore. — Harold R. Seykota, '39, XV.

In addition, the balloting procedure requires that classes whose numerals end in the figures four and nine elect Class Representatives on the Alumni Council for a five-year term. Starting with the Class of 1894 and ending with 1949, representatives will be named.

## Council Counsel

EDWIN D. RYER, '20, President, opened the 293d meeting of the Alumni Council, held at the Faculty Club on Monday, January 26, 1953, at which 137 members and guests were present. High lights of this meeting were the informal talks by: Karl T. Compton, Chairman of the M.I.T. Corporation, on legislation on subversive activities which are likely to affect educational institutions; Julius A. Stratton, '23, Vice-president and Provost, on engineering education in Europe; Jay W. Forrester, 6-45, Director, Digital Computer Laboratory, on applications of high-speed computers; and the report of the National Nominating Committee for officers of the Alumni Association for the coming year.

In the Secretary's report, Donald P. Severance, '38, announced changes in class affiliation for five Alumni, and reported that between December 1 and January 23, there had been visits to 21 M.I.T. Clubs—as far distant as Miami, Dallas, Monterrey, San Francisco, Portland, Ore., and Seattle—by 13 members of the Institute's staff or of the Alumni Council. He also reported that the Executive Committee had endorsed the candidates, presented by an alumni club in the appropriate area, to serve as members of the National Nominating Committee, as enumerated on page 266. For the National Nominating Committee, H. B. Richmond, '14 (in the absence of Raymond H. Blanchard, '17, chairman), proposed a slate of candidates who are also further identified on page 266.

As its chairman, Royal Barry Wills, '18, reported that speakers for the Midwinter Meeting would be: Dr. Compton; George R. Harrison, Dean of the School of Science; Professor Harold E. Edgerton, '27, of the Department of Electrical Engineering; and Professor Edward R. Schwarz, '21, Head of the Division of Textile Technology.

As Director of the Alumni Fund, Henry B. Kane, '24, reported that 7,560 Alumni had contributed \$144,100 as of January 26, as compared to 5,500 members who had contributed a total of \$123,200 at the corresponding date a year ago.

In bringing news of recent events at M.I.T. to the Council members, Dr. Compton directed attention to current legislation which is aimed at the investigation of subversive activities in institutions of higher learning. In Massachusetts, for example, a bill had been introduced to revoke the charter of any college which employed Communists or Communist sympathizers on its staff. On a national scale, three Congressional committees, with Senators Jenner and McCarthy and Congressman Velde as chairmen, are almost certainly to be engaged in investigating subversive activities in educational institutions, governmental bodies, and in labor unions. Dr. Compton pointed out that ill-considered legislation or poorly managed investigations could result in unfair and undesirable publicity, as has been true in the past, but assured Council members that the M.I.T. Administration would offer every possible co-operation in any inquiries of educational institutions.

Last fall, Dr. Stratton spent several weeks visiting technical institutions of higher learning in Europe.

His talk before the Council summarized the results of this investigation of foreign educational practices, particularly in regard to engineering education in England. Colleges in England appear to be more selective in admitting students, and place greater responsibility on them than is usual in the United States. Echoing the politely veiled comments of Sir Richard W. Livingstone, who addressed the Council at its November meeting, Dr. Stratton also felt that secondary schools in the United States provide much less discipline and effective training than in Great Britain. Because the apprentice system is so thoroughly entrenched in England, there is almost a total absence of graduate students in engineering, and little engineering research associated with engineering education. Some groups in England feel that American engineering training is superior to the British, and that efforts toward improving engineering education—either by creation of a national institute of technology, or by expansion of engineering activities in existing universities—would be desirable. On the other hand, there is also the feeling, in England, that American engineers do work which technicians in England are expected to do. The difference in point of view in the two cases, apparently, accounts for the fact that few engineering graduates reach managerial positions in England, whereas a growing number of technically trained persons in the United States become executives.

Until recently a tool of the research laboratory, the digital computer was described by Mr. Forrester as a mass-production tool for the processing of information. Such machines have been developed to solve an economic problem in computation where, in spite of the high cost of machines, the cost per computation is relatively low. Mr. Forrester illustrated this point by stating that although the Whirlwind digital computer was developed at a cost of about one million dollars, it was able to process large amounts of data at about 1/10,000th of the cost of computations by purely manual methods. Speed of computation is another field in which digital computers offer vast advantages over manual operators.

At present, three important fields of application are envisioned for digital computers: (1) computation in science and engineering; (2) time controls for industrial operations, such as chemical processes, power-system control, or steel-mill operations; (3) commercial applications in such fields as accounting, bookkeeping, and insurance statistics. When all three fields are fully developed, the dollar value of these three fields will probably be in reverse of the order given here.

Scientific and engineering use of digital computers is growing rapidly at present, and dozens of laboratories have been organized to provide computation service for firms which cannot justify the full-time use of such machines. Although the field of business applications is potentially the largest, in dollar volume, use of computers in this field will come slowly because few business concerns are now able to use such complex machines advantageously. Mr. Forrester concluded his talk by stating that between September, 1950, and September, 1951, a total of 1,400 persons had visited the Whirlwind computer.



## Chemistry Conclave

MEMBERS of the Institute's Department of Chemistry met with the Department's Visiting Committee on April 7, 1952, to review progress and discuss problems of that Department. Pierre F. Lavedan, '20, presided as chairman of the Committee.\*

Faculty members who spoke on various phases of the work of the Department included: Arthur C. Cope, Head of the Department of Chemistry; Leicester F. Hamilton, '14, Executive Officer; Professor James A. Beattie, '17; David N. Hume and Clark C. Stephenson, Associate Professors of Chemistry; George H. Büchi and David P. Shoemaker, Assistant Professors of Chemistry. The Committee members had opportunity to meet other members of the Department's faculty.

At the afternoon session, there was a discussion of the program for recruiting outstanding students as candidates for the doctorate and the work of the departmental committees in the selection of those who are best qualified for admission. This selection is based upon a thorough investigation of the many qualifications which are necessary for a successful research and business career, in which the heads of departments of other institutions, who encourage men to enter M.I.T., participate. The Committee also discussed the departmental placement program, the elective program, and the rigidity of the first-year program for all students; also the effect of any change in the first-year program on the Chemistry Department. The Committee also considered the program of financial aid to graduate students in the form of employment, scholarships, fellowships, and support from industry and government in the form of research contracts. The Department of Chemistry has no research projects which are classified: all are intended to be educational and the research of a pure science nature.

The retirement of several members of the Department will take effect during the next five years. The Committee discussed the problem of replacements, keeping in mind changes in emphasis in the various fields of chemistry and research. Dr. Cope called attention to the large number of distinguished chemists, among them many from other countries, who had participated in the Seminar Programs during the past year, and the intention of the Department to secure an outstanding chemist to serve as the first Arthur D. Little Guest Lecturer in the fall of 1952. The lecturer will deliver a series of 20 talks in his field of chemistry and this series will replace one of the regularly scheduled graduate courses. The Committee expressed its opinion that a constant review of the subject matter of all courses and the introduction of such special lectures were preferable to an increase in the number of subjects offered in the Graduate School, particularly since the graduate program is largely for Ph.D. candidates whose term of residence is three or four years.

There was a long discussion of the regulations governing the selection of the minor which is a re-

\* Members of this Committee for 1951-1952 were: Pierre F. Lavedan, '20, chairman, James McGowan, Jr., '08, Robert E. Wilson, '16, John M. Gaines, '26, John G. Kirkwood, '29, Ralph A. Beebe, and Paul L. Salzberg.

quirement for all candidates for the doctorate, and the Committee expressed the sentiment that these regulations should be made more flexible in view of the many new and important fields of chemistry. The minor requirements of many of the larger institutions were discussed and compared with those at M.I.T. The Committee expressed the opinion that the various fields of chemistry are today as widely separated from each other as the fields of some departments are separated from those of others; and some of the members felt that there might be some cases in which a major in organic chemistry might minor in physical chemistry or nuclear chemistry, without sacrificing the broadening influence of knowledge in a field removed from his major interest.

It was interesting to note that the great majority of undergraduates in chemistry are accepted as graduate students at M.I.T. or elsewhere, and that, in general, they study for and complete their requirements for the doctor's degree in high standing, and that in recent years the percentage of those with the doctorate going into academic work, or continuing in postdoctoral research, has increased.

The report of the Visiting Committee was presented at the October 6, 1952, meeting of the Corporation and the October 24 meeting of the Executive Committee, and was received on November 19 for publication in *The Review*.

## Midwinter Meeting

THE annual Midwinter Meeting of Alumni of the Institute was held in Walker Memorial at 6:00 P.M. on February 5. Karl T. Compton, Chairman of the M.I.T. Corporation, was the keynote speaker. Edwin D. Ryer, '20, Vice-president and Director of the Barbour Stockwell Company, Cambridge, presided in his capacity as president of the Alumni Association, and George R. Harrison, Dean of the School of Science, was master of ceremonies for two lecture-demonstrations which were given by members of the Institute's Faculty.

Professor Harold E. Edgerton, '27, of the Department of Electrical Engineering demonstrated the latest techniques and apparatus in electronic flash photography. Dr. Edgerton, the inventor of the stroboscopic speed light for photography, recently received the Franklin L. Burr award from the National Geographic Society for his outstanding contributions in this field.

Professor Edward R. Schwarz, '21, Head of the Division of Textile Technology, illustrated the properties of a number of new fibers and fabrics while entertaining the audience with *legerdemain*. Professor Schwarz, recognized as a world leader in the field of textile research, holds the Olney Medal of the American Association of Textile Chemists and Colorists and the Harold DeWitt Smith Memorial Medal of the American Society for Testing Materials.

Royal Barry Wills, '18, noted New England architect and author, served as chairman of the Midwinter Meeting Committee for the program which was attended by more than 1,000 Alumni. Mr. Wills is a member of the Executive Committee of the M.I.T. Alumni Association.

(Continued on page 272)

# BUSINESS IN MOTION

## *To our Colleagues in American Business . . .*

During the past twenty years the stature of the purchasing agent has risen tremendously. This is due in part to the fact that top management has come to realize that buying is not just a "how much" problem, but is a management function. Today the industrial buyer is generally recognized as a vital part of the company team, consisting of sales, engineering, production, and purchasing. He sits in on planning sessions. Sales, for example, wants a new model, or even a new product. Engineering discusses the design features that are wanted, and contributes its own imagination. Production makes close estimates as to costs of fabricating and assembling the various parts, says when it should be possible to begin shipment, and in what volume. Purchasing knows sources of supply, how reliable they are, how plentiful materials are, and what they cost. The company buyer may report that one suggested material is in short supply, or another is a bit high in price, and may recommend a few changes with the object of speeding production without affecting quality. All these matters are debated by the four groups, because the problems of all are intimately related.

There is another reason for the high standing of today's purchasing agent. It lies in his wide business background. Often he has had sales experience. In the more technical industries, such as the chemical, electrical, electronic and metal fabrication businesses, he is also quite likely to have an engineering background. Thus he can talk on even terms not only with his own people, but with salesmen and engineers from suppliers. He looks upon the latter for information about their materials, and learns from them by studying with them the fabrication problems in his plant. He may even visit the factories from which he may buy, in order to obtain first-hand information, and

to cement good relations with the people to whom he must look for close compliance with specifications. In doing so, he not only protects his own interests, and expands his knowledge, but creates and maintains good will for his company.

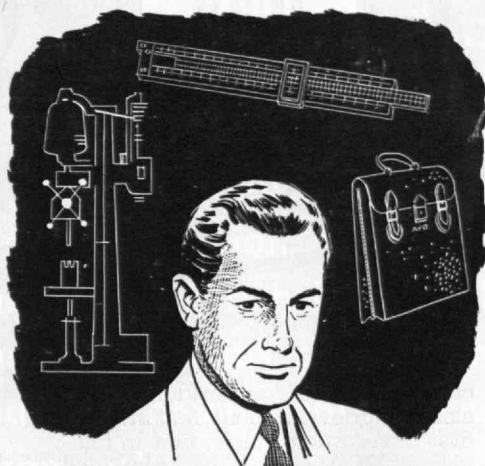
The salesman for a supplier naturally makes the purchasing department his first objective. That has always been true of Revere salesmen, and still is. These comments of ours about the modern purchasing man derive from our experience with him. We find him eager to learn all he can. When he asks for a bid on hundreds of thousands of pounds of,

say brass rod or strip, he will quite likely tell what the metal is to be used for and how it will be fabricated. If there is a question in his mind or that of the Revere salesmen, interviews with engineering and production are arranged. This often results in surprising economies. In one instance, the buyer produced a blueprint and asked if the part could not be made more economically from an extruded shape, to reduce machining and scrap. It could, and now is, at a

substantial saving. In another case, the purchasing agent said he felt he had to stock too many different sizes and gauges, many of them differing only slightly. The Revere Technical Advisory Service studied the matter, and made recommendations for standardization that cut the inventory by about 30%.

It is perfectly clear to us that today's purchasing contributes greatly to product improvement, cost reduction, and mass production. Thereby it favorably affects the national economy, and helps raise the standard of living and of employment.

In its long history Revere has witnessed the industrial revolution, indeed has helped bring it about. We salute the purchasing agents of the United States for the vital part they have played.



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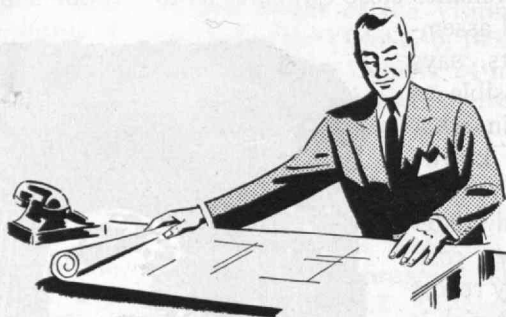
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## THE INSTITUTE GAZETTE

(Continued from page 268)

### Fellowships for Industrial Studies

THE School of Industrial Management at the Institute opened its competition, in January, for the fellowships which will be available for graduate students in the School in 1953-1954. Recent college graduates whose major studies have been in science, engineering, or engineering administration and who desire advanced work in industrial management are invited to apply, according to E. P. Brooks, '17, Dean of the School. Fellowships will include full tuition and may carry additional cash stipends of up to \$2,100 for married men and \$1,400 for single men.

The program of fellowships in this field at M.I.T. is made possible by the foundation of the School of Industrial Management, established under a grant made in 1951 by the Alfred P. Sloan Foundation, Inc. The School, housed in its own building at 50 Memorial Drive, Cambridge, now sponsors undergraduate and graduate studies in industrial management and the Executive Development Program for those already holding responsible positions in industry.

The graduate program in the Institute's new School of Industrial Management, leading to the degree of master of science in Industrial Management, normally requires two years for those who have had no previous work in this field, according to Dean Brooks.

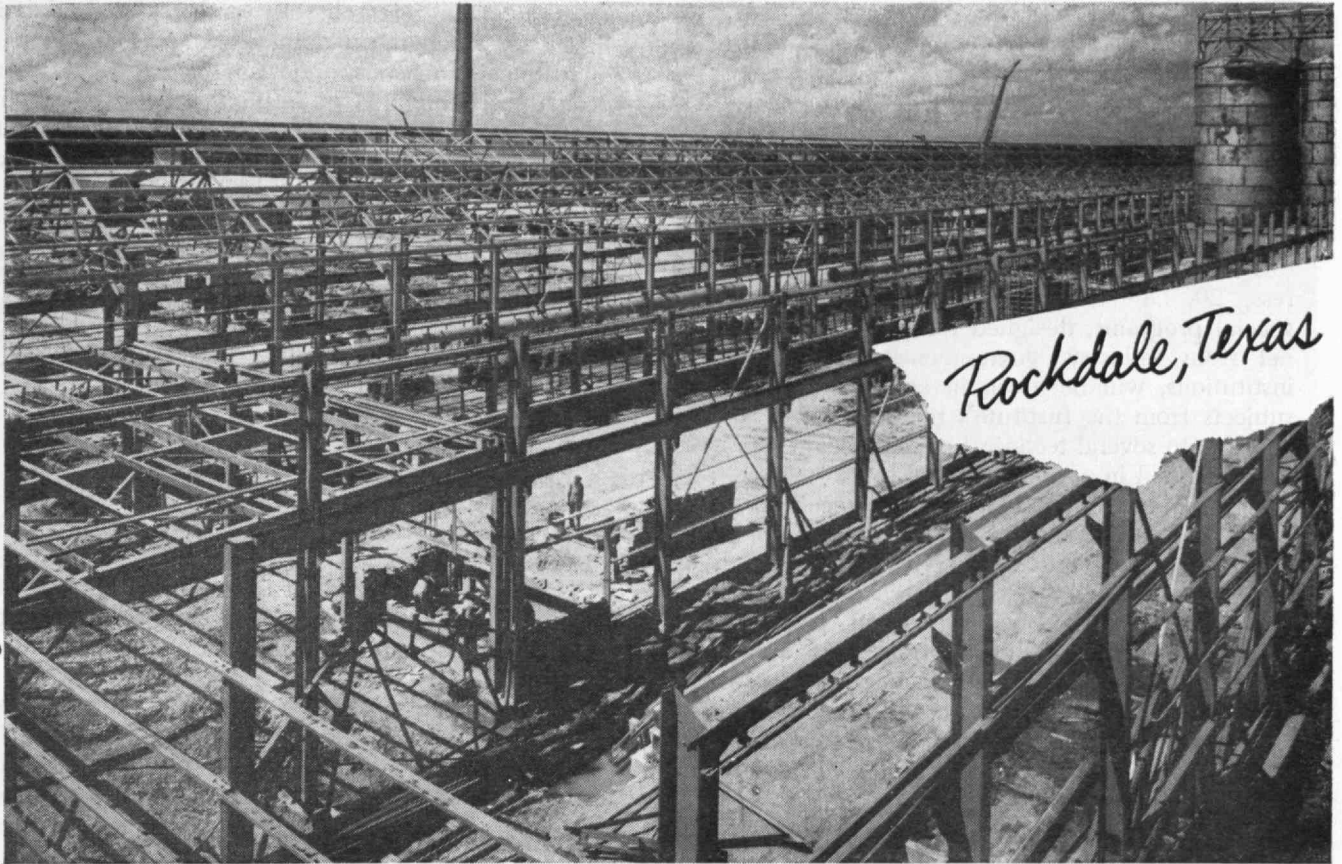
The first year of the two-year program is devoted to basic subject matter in four areas: (1) the history and the economic and legal foundations of business activity; (2) the interrelationships of individuals and groups in industry; (3) the production, distribution, and financial structure of the economy; and (4) the operational tools of management.

The second-year curriculum is in large part worked out individually by consultation between the student and members of the faculty. A typical program will include advanced work in production management, marketing management, financial management, and industrial relations; and seminars in administrative policy and in public economic policy.

Fellowship recipients, selected by the Graduate Committee of the School of Industrial Management, will be those applicants who appear to have the greatest potentialities for future leadership in business. This decision, according to Dean Brooks, will be based upon such factors as outstanding scholastic performance, demonstrated initiative and leadership ability, evidence of high moral and ethical standards, favorable personality traits, and—within certain limits—successful working experience.

Applications should be filed by March 1, 1953, or as soon thereafter as possible. Further information and application blanks may be obtained from Thomas M. Hill, Associate Professor of Accounting, School of Industrial Management, M.I.T., Cambridge 39, Mass.

(Continued on page 274)



Rockdale, Texas

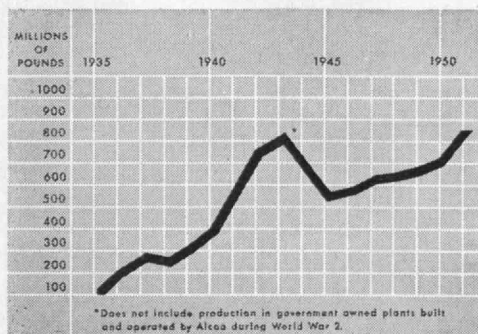
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For more facts and application forms write to Personnel Dept., ALUMINUM COMPANY OF AMERICA, 1825 Alcoa Bldg., Pittsburgh 19, Pa.

**Alcoa**  
  
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 ALUMINUM COMPANY OF AMERICA



## THE INSTITUTE GAZETTE

(Continued from page 272)

### Summer Program Expands

THE largest group of special summer programs in the history of M.I.T. will be given at the Institute this coming summer, according to Ernest H. Huntress, '20, Director of the Summer Session. These special programs, designed for professional personnel from industry, government, and educational institutions, will be given in addition to academic subjects from the Institute's regular courses and in addition to several technical conferences which have been planned in a number of fields.

Half of the 28 programs just announced are to be given for the first time as special professional programs at the Institute. They include: strength of materials, strain gauge techniques, thermodynamics, product design, fluid power control, casting light metals, physical metallurgy, transistors and their applications, noise reduction, management responsibility for occupational health, operations research, control problems of the executive, automatic control of aircraft, and mathematical problems of communication theory.

Because they are in great demand, other programs have been carried over from previous summers. They include: industrial photoelasticity, aerodynamic measurements, lubrication engineering, metal cut-

ting, textile research, city and regional planning, science teachers program, electrical methods of instrumental analysis, optical methods of instrumental analysis, technique of infrared spectroscopy, applications of infrared spectroscopy, digital computers and their applications, feedback control systems, and food technology.

Last summer eight professional conferences and 22 special summer programs brought more than 3,150 men and women to the M.I.T. campus in addition to the regular enrollment of undergraduate and graduate students. Some 400 different organizations, including 263 industrial companies and 52 government agencies, were represented in the special programs alone.

### Cambridge to Princeton

PROFESSOR KARL W. DEUTSCH, of the Department of English and History at M.I.T., has been granted a year's leave of absence from the Institute — effective February 1 — to accept appointment as research associate with the rank of visiting professor at Princeton University.

At Princeton, Dr. Deutsch (who is professor of history and political science) will work at the University's Center for Research on World Political Institutions, where he has served as consultant since early 1952. His work at the Center will focus on a series of case studies in political integration, nationalism, and federal union.

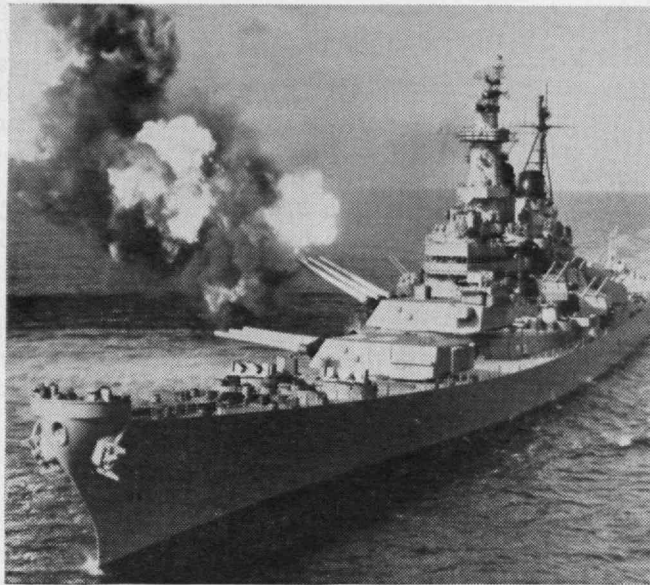
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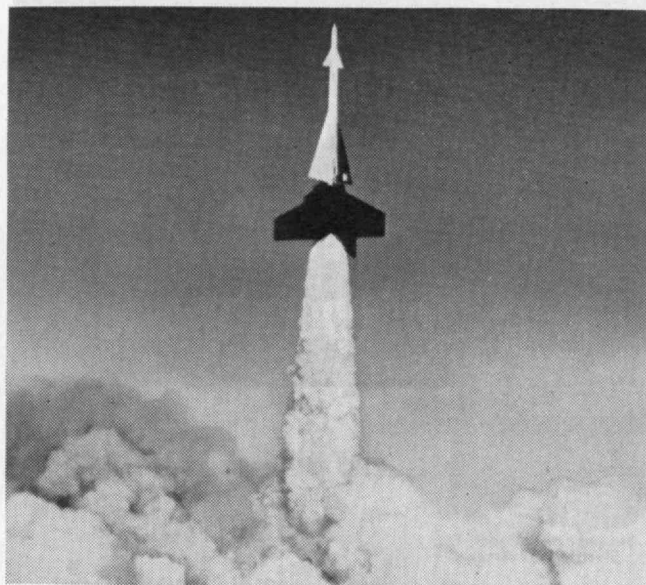
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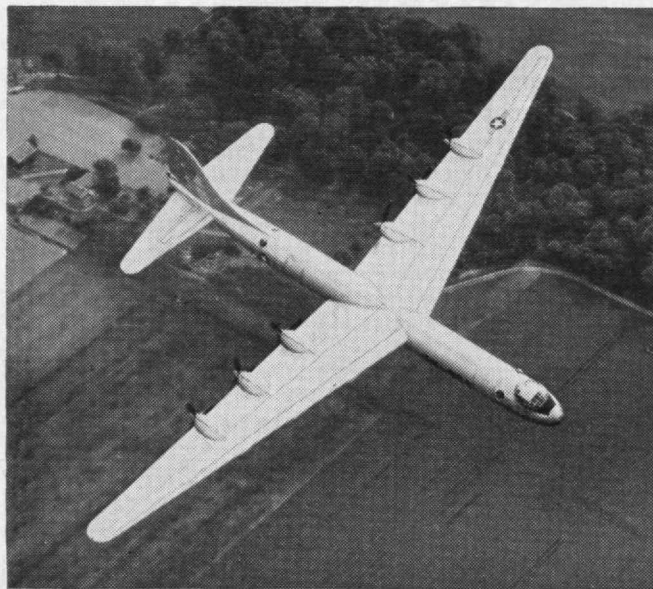
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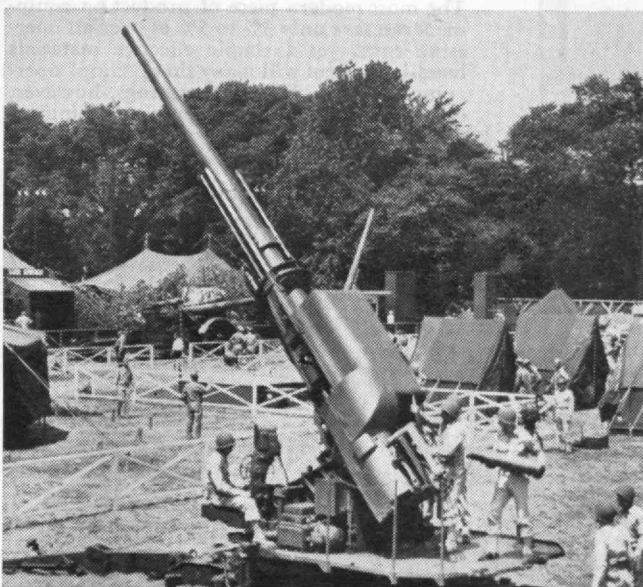
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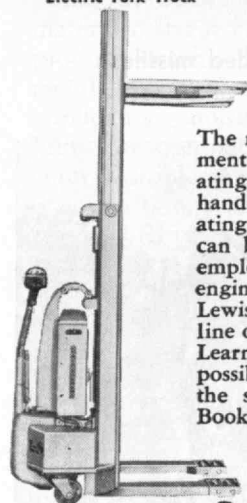




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## THE INSTITUTE GAZETTE

(Continued from page 274)

### Physics Contributions

EVIDENCE of the substantial contributions which the M.I.T. Faculty and staff give to the development of physics was apparent at the 1953 annual meeting of the American Physical Society, held at Harvard University from January 22 to 24.

Julius A. Stratton, '23, Vice-president and Provost of the Institute, was the after-dinner speaker at the banquet, during which William Shockley, '36, was awarded the Oliver E. Buckley Solid State Physics Prize. This award is presented to the individual who has "been adjudged to have made a most important contribution to the advancement of knowledge in Solid State Physics within the five years immediately preceding the award." In addition, Professor Francis Bitter, of the Department of Physics, was one of 17 speakers who presented invited papers. Professor Bitter's paper was entitled "Magneto-Resonance and Magnetic Optics."

But of greatest significance, however, is the substantial support to current physics research which stems from Technology laboratories. Of the 327 technical papers on the program, 32 or virtually 10 per cent, were delivered by M.I.T. members. The titles and members are as follows:

"Microwave Determination of Electrical Properties of Germanium" by James M. Goldey and Sanborn C. Brown, 10-44.

"Zeeman Effect in Rotational Spectra of Asymmetric-Rotor Molecules" by Bernard F. Burke, '50, and Malcolm W. P. Strandberg, '48.

"Proton-Proton Scattering in the Interference Minimum Region" by Daniel I. Cooper, 2-46, David H. Frisch, '47, and Robert L. Zimmerman, '52.

"Total Neutron Scattering Cross Sections of Polyethylene and Carbon at 1.32 Mev" by Charles L. Storrs, Jr., '49, and David H. Frisch, '47.

"Neutron-Deuteron and Proton-Deuteron Scattering in the S-wave Region" by Robert L. Zimmerman, '52, Daniel I. Cooper, 2-46, and David H. Frisch, '47.

"Inelastic Scattering of Protons and Deuterons from B<sup>10</sup>" by Charles K. Bockelman, Cornelius P. Browne, Anthony Spurduto, '42, and William W. Buechner, '35.

"Inelastic Scattering of Protons and Deuterons from N<sup>14</sup> and Li" by Cornelius P. Browne, Charles K. Bockelman, William W. Buechner, '35, and Anthony Spurduto, '42.

"Photoproduction of Positive  $\pi$ -Mesons, on Hydrogen" by G. Sargent Janes and William L. Kraushaar.

"The Analysis of Photomeson Production Data" by Bernard T. Feld.

"The Scattering of Fast Nitrogen Molecules by Nitrogen" by Isadore Amdur and William T. Lindsay, Jr.

"Low Frequency Oscillator, Circular Sweep Generator, and Direct Reading Phase Measuring Instrument" by Sidney Lees, '48, William D. Green, '43, and E. T. Colton.

"Accelerators Incorporating Alternating-Gradient Focusing" by J. P. Blewett.

"Photomeson Production from Hydrogen" by Louis S. Osborne, '50.

"Photoproduction of Neutral Mesons in Hydrogen" by Yves Goldschmidt-Clermont, '52, Louis S. Osborne, '50, and Merrill B. Scott.

"Magneto-Resonance and Magnetic Optics" by Francis Bitter.

"East-West Asymmetry for Positive and Negative Mesons Near the Equator" by Frank B. Harris, Jr., '49, Bruno Rossi, and I. Escobar Vallejo.

(Concluded on page 278)



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## THE INSTITUTE GAZETTE

(Concluded from page 276)

"Atmospheric Effects on Cosmic-Ray Intensity at Sea Level" by Stanislaw Olbert, '51.

"Experiments on Air Showers, Part I" by Robert W. Williams, '48, and Wayne E. Hazen, '36.

"Experiments on Air Showers, Part II" by Wayne E. Hazen, '36, C. A. Randall, Jr., and Robert W. Williams, '48.

"Total Neutron Cross Sections of Chlorine and Carbon" by Robert M. Kiehn, '50, Clark Goodman, '40, and K. F. Hansen.

"Photoemission from Silver into AgCl, KBr, NaCl, and New Bands of Photosensitivity in AgCl" by Mathias A. Gilleo, '48.

"Photocurrent, Space Charge Build-Up, and Field Emission in Alkali Halide Crystals" by Arthur von Hippel, Eugene P. Gross, J. G. Jelatis, and Myer Geller.

"The S-Wave Two-Body Interaction in Nuclei" by David H. Frisch, '47.

"Echelle Spectroscopy" by George R. Harrison.

"The Strong Focusing Synchrotron" by M. Stanley Livingston.

"Scintillation Counter Measurements of the Absorption of the N-Component" by George W. Clark, '52.

"Experimental Results on Neutral V Particles" by Charles Peyrou, Richard Safford, and Herbert S. Bridge, '50.

"Cloud-Chamber Observations on the Unstable Heavy Charged Particles in Cosmic Rays" by Richard Safford, Charles Peyrou, Herbert S. Bridge, '50, and Bruno Rossi.

"Proton-Gamma Angular Correlations in the  $C^{12}(p,p'\gamma)$  Reaction" by Harry E. Gove, '50.

"A Liquid Argon Ionization Chamber Measurement of the Shape of the Beta-Ray Spectrum of  $K^{40}$ " by John H. Marshall, '52.

"Electrical Conductivity of Magnetite at Low Temperatures" by Bertram A. Calhoun.

"Stability of the Boundary Layer at Supersonic Speeds" by Chia-Chiao Lin.

"High Energy Photoproton Production" by Albert Wattenberg, Bernard T. Feld, and Rajaram D. Godbole, '52.

"Angular Distributions of  $(d,p)$  Reactions" by Clayton F. Black.

"Fission of Uranium with 16-Mev X-Rays" by Harold G. Richter, '50, and Charles D. Coryell.

### Cabot Aids Egyptian Industry

THOMAS D. CABOT, a life member of the M.I.T. Corporation and formerly Director for International Security Affairs for the Department of State, has been asked to leave temporarily his duties as executive vice-president and vice-chairman of the Board of Godfrey L. Cabot, Inc., "to advise and assist the Government of Egypt in developing the country's industries under a Point 4 program." He will serve as an industrial consultant to the Technical Cooperation Administration of the Department of State in his new post.

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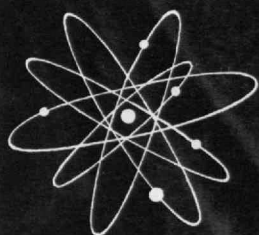
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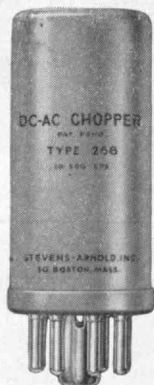
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## THE EDUCATION OF TOM, DICK, AND HARRY

(Continued from page 264)

"Tom, will you continue with your story? We want to hear the rest of it."

"Well, the Dean said I could leave my bill, and it will be paid at the end of the month if the clock is still running then. I told Dean . . . I was more interested in being admitted to college than anything else. Dean . . . told me:

"You are a little late for matriculation. Our registration is supposed to be closed, unless any cancellations are received. What is the educational program you wanted to discuss with me?"

"Then I outlined to him the program that Grandfather, Mr. X, and I had evolved for a co-operative course. He said it looked interesting, although it would not fit the college co-operative schedule very well."

"Tom," asked the mother impatiently, "are you accepted, or aren't you?"

"I am accepted this way," said Tom. "If I cannot become a regular freshman, I will become a special student until such time as I can become a regular student. The Committee on Admissions determines the freshmen, but the Dean himself can accept a special student. So I can start college this fall. Do you think I did pretty well?"

"I am proud of you, Tom," said his father, breaking his silence. The mother wiped her eyes. The grandfather was apparently lost in thought, with his eyes shut.

### Dick

Dick's story is quite short. He was brilliant in his classes at high school, was accepted by several colleges, and entered the institution where Tom had been accepted. There he convinced his teachers that he could carry a heavier schedule than others, and so he took extra courses in electrical, chemical, and mechanical engineering. He said he liked them all equally well. Dick entered college two years later than Tom, but as he did not take industry assignments, finished the same year as Tom. They belonged to the same fraternity, and the two students developed a great deal of respect and affection for each other. On graduation with a master's degree, Dick was qualified to enter a research or development laboratory in any field.

### Harry

Harry came to Tom's school with a background of two years of law, in the study of which he had won high praise for his intelligence. He was from a prosperous family in the South, and soon won the nickname of "Colonel" from his colleagues. His ambition was to become the president of a large manufacturing concern, and realized that in order to fulfill this aim, he would need a thorough understanding of engineering. Instead of enrolling in high-sounding but easy courses for rich men's sons, he enrolled in the

(Continued on page 282)

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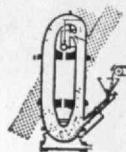
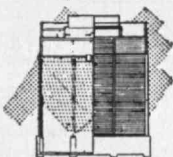
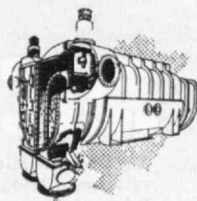
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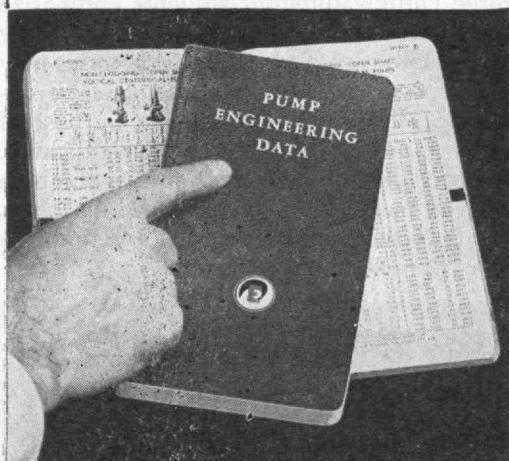


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## THE EDUCATION OF TOM, DICK, AND HARRY

(Continued from page 280)

co-operative option in the electrical department, because he wanted contact with manufacturing and a good concern while still in college. He did not try to evade any of the required courses; and as he also had the scholastic ability to carry more than the standard number of courses, he took additional business and management courses. At his second industry assignment, he asked to be placed in the sales department so that he would have opportunity to do some market study for his employer. His report contained so much useful information that the sales manager used it in an address to his trade association. When Harry graduates, a good job awaits him in an enviable concern.

### Tom, Dick, and Harry

On last reports, Tom, Dick, and Harry were jointly engaged on a project for a master's thesis entitled "The Rehabilitation of the Textile Industry in New England." The trade association and the . . . National Bank have agreed to co-operate with them and to provide any data that the trio may need in their investigations. A number of industrial equipment manufacturers have offered free consultations with their engineering staffs. Tom is planning a more efficient factory. Dick is looking into the simplification of the processes and the introduction of new lines, including the synthetic fibers. Harry is studying the markets, costs, and employee morale. He has had some very friendly meetings with the leaders of the weavers' union and has enlisted their support, assuring them that the trio will plan on a pay differential for the New Englanders based on greater efficiency in better equipped factories.

This trio, or any other for that matter, may not be able to bring the New England textile industry back to its former industrial importance, but the stories of these three entirely different students emphasize the fact that sound training for professional life may be achieved in more ways than one. Their stories may also serve to encourage the trend that can be detected, in some schools, toward a more purposeful and effective approach to engineering education. Such an approach offers good opportunity to combine class work with activity in industry, and enables students to apply theory by "learning by doing." In

(Continued on page 284)

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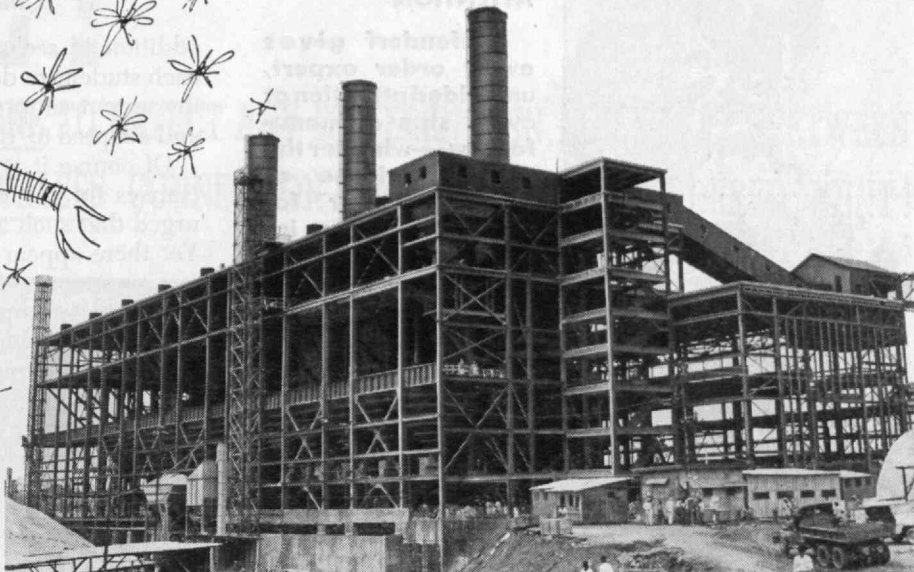
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## THE EDUCATION OF TOM, DICK, AND HARRY

(Continued from page 282)

addition, it seeks to provide ample opportunity for each student to develop himself to the fullest, even to the extent of providing a curriculum modified for, and adapted to, the needs of the individual student.

Of course it is possible to go too far in providing courses for the need of each student, and it is not urged that such a procedure be followed excessively. Yet there appear to be some very real disadvantages in a program which is too rigid. As a means of arriving at an appropriate middle course, the author believes the following observations might be given more serious consideration, especially when students make the transition from preparatory school to college:

1. In judging college material, there is danger in relying too much on high-school grades. The adolescent's normal interest in the opposite sex may interfere with abstract studies without implying that he is poor material for future education. The applicant's *total* record should be considered, particularly his hobbies and his achievements in them. Absence of hobbies or poor performance in them, coupled with poor grades, may properly be considered a bar to college entrance.

2. Advanced mathematics is more important in academic type of work than in most phases of engineering practice in industry. For this reason a student with a poor head for mathematical abstractions should not be penalized too much if he shows an instinct for the physical sciences and their applications. By and large, successful engineers are visual-minded rather than mathematics-minded.

3. The teaching of mathematics in the high school should be such as to appeal to interest rather than to memory. At home parents can often do much to stimulate interest in mathematics. Moreover, in the smaller towns, they can appeal to the school boards so that instruction in this subject will be more interesting and effective. For immediate results in individual cases, it may be wise to resort to tutoring, either during the school year or the summer season.

4. It is customary to require engineering students to choose between electrical, mechanical, chemical and civil, with further subdivisions, such as power, communications, and electronics under electrical engineering. This classification has proved very advantageous in placing the graduates, but it has been

(Concluded on page 286)

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No noise difference was detectable between any of the three.

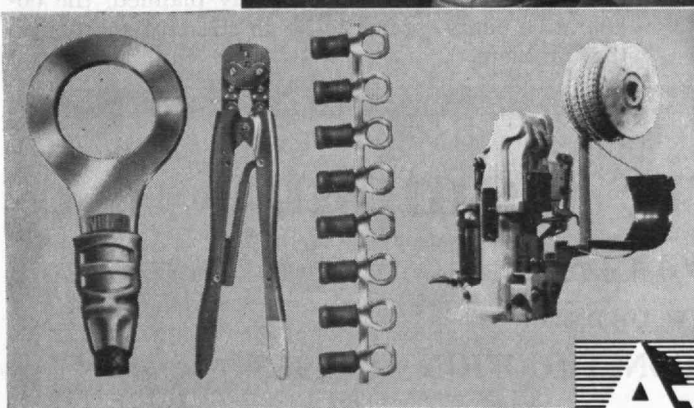
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## THE EDUCATION OF TOM, DICK, AND HARRY

(Concluded from page 284)

found that, in the later and more advanced levels of responsibility, the classification is considerably different. One engineer may have become the manager of manufacturing, responsible for all operations of the factory, including the electrical, mechanical, chemical, and civil, if any. Another has become manager of design and development — this also including electrical, mechanical, and chemical developments. Still another has become manager of marketing, responsible for the disposal of all the products of the factory. A classification such as (1) manufacturing engineering, (2) developmental engineering, and (3) application engineering is more in line with the temperaments and talents of individuals: Tom's temperament would easily fit him into any kind of manufacturing; Dick's, into any kind of highly technical work; and Harry's, to the marketing and financial management of any kind of product.

5. One might well say with much truth that four years is barely enough time for the fundamental courses. In most colleges all engineers take the same courses for the first two or three years, so that professional classifications are nominal in the student's early college work. But even when nominal, such classification makes a great deal of difference in the attitudes of the electrical, mechanical, and chemical students towards a subject that they all are taking together. If the classification is to be nominal, why not make it of a type that will contribute to a more meaningful attitude, and be more profitable in the long run?

It is not the thought here to suggest changing the classification in college catalogues, but where a student's capabilities and limitations are fairly clear (maybe at the end of the second year), and the facilities of the school at all suitable, he might be guided or advised, or at least *permitted*, to follow a curriculum with a modified orientation as did Tom, Dick, and Harry. Most engineering schools are well enough equipped to provide adequate curriculums for the Dicks and the Harrys, but the Toms are an enormous neglected group, perhaps because schools lack adequate facilities for them. Properly planned, the co-operative course seems to be an effective solution of that problem.

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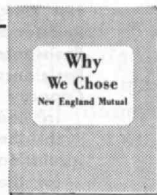
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## PREVENTION OF RUST

(Continued from page 254)

deterioration, by corrosion on the soil side of the pipe, accounts in large measure for the present low-cost distribution of oil and gas.

It is interesting and significant that the expense of cathodic protection is often more than paid for by savings in steel made possible by use of a thinner wall pipe in place of the extra heavy wall otherwise specified in order to take care of corrosion. For example, one 225-mile line of eight-inch diameter pipe reduced in wall thickness from 0.322 to 0.25 inch, the latter thickness being ample to withstand internal pressures, saved 3,700 tons of steel valued at \$330,000 in 1945.

The combination of insulating coating and cathodic protection has also gained use in domestic hot-water tanks, where an inexpensive enameled or glass lining, in combination with a magnesium rod, provides for protection of the steel tank at any pores in the coating and allows for longer life of the rod.

The Panama Canal gates, about 75 feet high, 65 feet long and 7 feet thick — and weighing approximately 700 tons each — are protected cathodically using an impressed current from a rectifier in combination with steel anodes in the form of rods mounted parallel to the protected surface. The gates are covered with a hot bituminous coating, and current is impressed equivalent to one ampere per thousand square feet of surface. The cost of the installation was approximately \$1,000 per gate, which

is  $\frac{1}{2}$  per cent of the estimated cost of replacement. In addition to saving some expense of painting and repairs, this arrangement provides added assurance that the Canal will not be shut down, particularly in critical times when the naval fleet is under urgent assignment.

Cathodic protection of ships has been a challenging problem ever since the attempts of Davy. The present use of steel hulls and bronze propellers sets up sizable galvanic cells such that the stern acts as anode, and, therefore, corrodes at an accelerated rate. Current resulting from this dissimilar metal combination varies with the paint system and motion of the ship, but at all times it is apt to be surprisingly high. Measurements at one time on a submarine indicated currents as high as 30 amperes. To protect against this galvanic action, Davy's idea of using a more active metal, like zinc, attached to the hull near the propeller received attention early in the history of steel ships and is still common practice today. There is some question of how long such zinc blocks are fully effective in accomplishing their purpose in view of the fact that zinc is covered within a few weeks by a corrosion product which limits the current output. The zinc is said to be polarized. The situation apparently can be improved some by use of high-purity zinc which polarizes less than commercial zinc.

It is reported that although zincs for ships have been in use for many years, the principle of their function has sometimes been forgotten, as is attested by the practice of some shipyards to paint over the

(Concluded on page 290)

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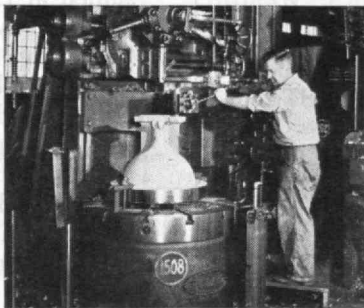
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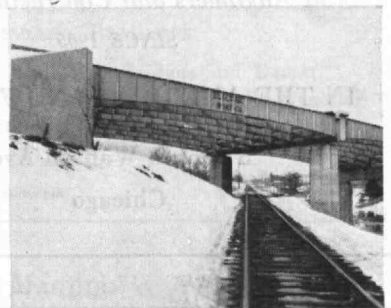
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## **PREVENTION OF RUST**

*(Concluded from page 288)*

zinc blocks as well as the hull. Also, occasionally some "old salts" make claims to the effect that their superior skill in attaching and painting zincs has extended life of the zincs to the point that on dry-docking a ship, they look as good as new. The evaluation of high-purity zincs and the possible application of magnesium for the purpose of protecting the stern are presently being investigated by several laboratories.

Since sandblasting and painting a medium-sized vessel costs perhaps \$30,000 or more, there is ample incentive to try cathodic protection instead. This is being investigated by the Naval Research Laboratory, and has already been installed and reported upon by the Canadian Navy, with results that look promising. A mine sweeper, 225 feet long, of 960 tons displacement, was fitted in June, 1949, with 10 magnesium anodes each weighing 80 pounds. These were attached to, and insulated from, the bilge keel. The protective current was regulated, since too much current may cause blistering of the paint. Eleven months later, the ship was dry-docked and the hull found to be in very good condition. No corrosion was found on the underwater surface except at a few re-entrant places, such as the propeller shaft under the rope guards and the innermost section of the injection inlet. The ship was relatively free from fouling. This may have resulted from action of the antifouling paint freshly applied in 1950, since the maximum period of effectiveness of this particular paint upon exposure to sea water is about three months. The ship happened to be launched at a time coinciding with the months of June to September, when fouling organisms in Halifax Harbor are most active, but the paint during this time was also most effective in combating fouling. In comparison, aggravated fouling under other conditions or in more southerly waters may occur. Since only 435 pounds of magnesium were consumed in 11 months, the cost, not counting installation, is only about \$200. This experience convinced Canadian engineers that dry-docking of active ships might well be lengthened from one to two years with no risk to the ship from corrosion, and with no risk from fouling, provided the ship could be dry-docked at chosen times of the year. The possible savings by this schedule are unusually attractive.

The U. S. Naval Research Laboratory, co-operating with the Bureau of Ships and the Bureau of Yards and Docks, is also studying the problem of cathodically protecting active and inactive ships, using both magnesium anodes and impressed current. Graphite anodes are employed when impressed current is used. The present "moth-ball fleet," tied up at various harbors in the country, is being protected both ways—the results of which are providing general information on the effective protection of ships in harbors, as well as those under way at sea.

At long last, Sir Humphrey Davy's idea has been successfully applied to the common good, both on land and on sea, and on a scale that he would have hardly dreamed possible when he performed his few laboratory experiments and service tests in 1824.

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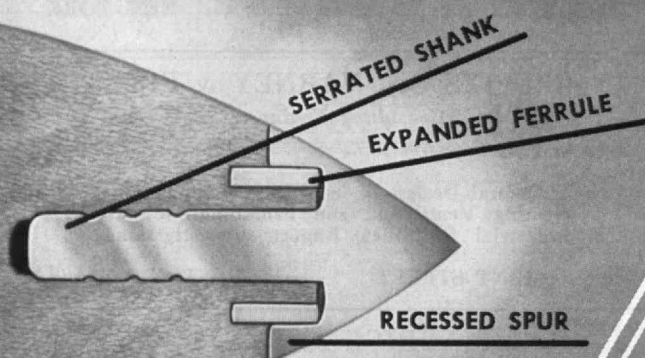
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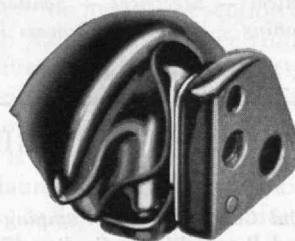


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# Alumni AND Officers IN THE News

## New Offices

CHARLES J. MCCARTHY'16, Vice-president of United Aircraft Corporation, has been elected president of the Institute of the Aeronautical Sciences for 1953.

On January 26, 1953, JOHN B. WILBUR '26 was inducted as vice-president of the Northeastern Section, American Society of Civil Engineers.

DENNISTOUN WOOD VERPLANCK'28, Professor and Head of the Mechanical Engineering Department at Carnegie Institute of Technology, was appointed to fill the chair of the Alcoa Professorship in Engineering, which was established in January, 1953, at the Carnegie Institute.

## Honor Roll

ROBERT B. SOSMAN'04 has been named to receive the 1953 Albert Victor Bleining Award, the highest honor conferred in this country in the field of ceramics. It is given annually by the Pittsburgh section of the American Ceramic Society to an outstanding man in that field. Dr. Sosman, professor at Rutgers University, is the sixth recipient of the Bleining Award to be presented on March 13 in Pittsburgh.

CLARENCE D. HOWE'07 has been honored by the establishment of an engineering foundation in his name at Dalhousie University in Halifax. The \$200,000 foundation was given to the university by a group of friends and admirers of Mr. Howe, who is Canadian Minister of Trade and Commerce and in charge of defense production.

PROFESSOR ERWIN H. SCHELL'12 has received the 1952 Wallace Clark Medal "for distinguished contribution to scientific management in the international field." Professor Schell, who is in charge of the Course in Business and Engineering Administration, under the School of Industrial Management at M.I.T., was presented the distinguished award at the annual dinner meeting of the National Management Council on January 14 in New York.

THOMAS D'ARCY BROPHY'16 was featured in the "Look Applauds" column of *Look* magazine for the week of January 12, for his achievements as president of the American Heritage Foundation. The Foundation's most recent project was its unprecedented register-and-vote campaign for the presidential election.

The Perkin Medal was awarded to CHARLES A. THOMAS'24 by the American Section of the Society of Chemical Industry, in co-operation with the American Chemical Society, the American Institute of Chemical Engineers, the Electrochemical Society, and the American Section, Societe de Chimie Industrielle. Dr. Thomas received the Perkin Medal on

January 16 in New York "for outstanding contributions to the chemical technology of automotive fuels, catalysts, of synthesis of valuable products from petroleum, and of atomic energy."

LEON N. ZAITZEVSKY'26 received recognition for his outstanding work in designing and constructing several churches in the St. Louis, Mo., area. Mr. Zaitzevsky, who is chief designer and an associate of Maguolo and Quick, architects of St. Louis, was honored at a dinner held last fall in the crypt of one of the new churches he designed in Ladue, Mo.

HOWARD O. MCMAHON'41, Science Director of Arthur D. Little, Inc., Cambridge, Mass., received the Frank Forrest Award for 1952 at the fall meeting of the Glass Division of the American Ceramic Society. The award is given annually by Frank W. Preston and the Preston Laboratories in commemoration of Captain Frank Forrest, young chemist and glass technician of the Preston Laboratories. Dr. McMahon received the award for his papers "Thermal Radiation from Partially Transparent Reflecting Bodies," from the June, 1950, *Journal of the Optical Society of America* and "Thermal Radiation Characteristics of Some Glasses," published in the March, 1951, issue of the *Journal of the American Ceramic Society*.

JOHN P. HORTON'49 received the Kenneth Allen award of the New York Sewage and Industrial Wastes Association, for the best research paper presented during 1952. Dr. Horton was honored for work reported in a paper: "Applicability of the Lethal Properties of Ultrasound to Sanitary Engineering Practice."

## Authors and Speakers

THOMAS C. DESMOND'09 is the author of an article entitled, "The High Cost of Driving," published in the January, 1953, issue of the American Medical Association's magazine, *Today's Health*.

JOSEPH W. BARKER'16, President and Chairman of the Board of the Research Corporation of New York, wrote an article entitled "Standards - Engineering Tools for Industry," which appeared in the December, 1952, issue of the *Philadelphia Purchaser*.

KENNETH T. BAINBRIDGE'25 is one of the contributing authors to Volume I of *Experimental Nuclear Physics* (New York: John Wiley and Sons, Inc., March, 1953), edited by Emilio Segre. Material written by Dr. Bainbridge covers the following: "Charged Particle Dynamics and Optics"; "Relative Isotopic Abundance of the Elements"; and "Atomic Masses."

JACOB J. JAEGER'34, assistant manager of engineering for the Pratt and Whitney

division of Niles-Bement-Pond Company, was the main speaker at a meeting on January 7 of the Fairfield county chapter of the American Society of Tool Engineers. His subject was "Recent Developments in Machine Tools."

## Obituary

WILLARD P. GERRISH'87, November 11, 1951.

KARL H. HYDE'90, December 13.\*

MARY L. W. MORSE'90, October 3.

HARRY B. BAKER'92, June 15, 1947.

CHARLES A. MEADE'94, January 14.

LESLIE R. MOORE'94, January 10.

EDWARD S. MANSFIELD'96, December 18.

JOSEPH W. STICKNEY'96, date unknown.

GEORGE M. GOODSPEED'97, November 7.\*

LYMAN ARNOLD'98, December 27.\*

WALTER H. LEE'98, November 9.\*

DAVID H. MACFARLANE'98, February 1, 1950.\*

HAROLD S. GRAVES'99, June 23.

RALPH W. LOUD'99, December 14.\*

JOSEPH P. ALLEN, JR., '00, July 6.\*

PERCIVAL C. CLOW'00, April 16.\*

WILLIAM L. STEVENS'00, October 13.\*

PERCIVAL E. TRUE'00, April 7.\*

FARNUM F. DORSEY'01, June 25.\*

WILLIAM W. CRONIN'04, March 26, 1952.\*

DAVID W. BRIDGES'05, December 31.

ARTHUR C. KIRBY'06, February 12, 1952.\*

GUY O. SMITH'06, July 2, 1951.

CORNELIUS S. FLEMING'07, December 6, 1951.\*

DR. WALTER C. ROCHELEAU'07, December 25.

ARTHUR E. SKILLING'08, March 13, 1952.

JOE D. CREVELING'09, date unknown.\*

CARL W. GRAM'09, December 30.\*

ARMIN F. HEROLD'09, January 5, 1952.\*

JOSEPH MATTE, JR., '09, September 5.

GEORGE FOX'10, December 9.

JOHN LODGE'10, January 2.\*

OTTO C. F. MEISEL'11, December 25.\*

RICHARD C. STICKNEY'12, December 14.

HERBERT J. BEIERL'15, December 5.

EARL E. DETRICH'15, December 8.

E. EUGENE PLACE'15, December 4.\*

LEVI F. SILVERSMITH'15, December 18.

HOWARD L. FOSTER'16, December 13.\*

ARTHUR T. MUNYAN'16, September 13.\*

BENJAMIN T. HALL'17, April 2.

HENRY L. MILLER'17, December 27.

RICHARD R. ADAMS'18, January 16.

GILBERT F. BEERS'19, January 15.

JOSEPH H. CARR'21, September 8.\*

CHARLES H. HERTY, JR., '21, January 18.

JAMES B. HELME'22, August 27.\*

PAUL ADAMS'23, March 9, 1952.\*

HAROLD A. DAMBLY'23, January 15.

SCHUYLER HAZARD, JR., '23, December 29.

MARY E. PROCTOR'24, April 27.\*

FRANK W. BEMIS, JR., '25, January 16.

ROBERT W. CASE'29, November 27.

FREDERICK R. HUNTINGTON'30, Dec. 27.

ANTHONY BOGATKO'49, September 28.\*

DONALD KINGMAN'49, August 26.\*

\*Mentioned in class notes.



# News FROM THE Clubs AND Classes

## CLUB NOTES

### *Boston Luncheon Club*

At the last meeting of 1952, 60 members and guests enjoyed hearing Pietro Belluschi, Dean of the School of Architecture and Planning, discuss the problems facing the Faculty in maintaining the School's distinctive position. It must be recognized that the roll of the architect has changed from an exterior decorator catering to wealthy people to one of designing homes for the many. Today's architect must understand construction, mechanical engineering (air conditioning and ventilation), physics (acoustics), and electricity (lighting). He cannot work alone but must depend upon teamwork with other specialists. He must learn to co-operate and be flexible to meet the changing needs of the medium in which he operates.

The curriculum today includes enough of the classics to give him racial cultural background, enough art to understand the visual aspects of the structures he designs, and an understanding of the importance of the various branches of engineering he will encounter in the future.

An equally important and growing department is City and Regional Planning. The importance of this field, which involves the studies of sociology, land economics, business administration, and law, is just beginning to be recognized.

E. P. Brooks'17, Dean of the new School of Industrial Management, talked to 60 members and guests of the Club on January 15. He outlined briefly the organization of the School, of which Course XV is the undergraduate section with a graduate school providing a master's degree in one year to Course XV graduates, or in two years to engineering graduates of M.I.T. or other schools. There will also be a continuation of the Sloan Fellowships, which provide an intensive advanced course of 12 months duration to a group of about 18 selected junior corporate executives, with the expectation that the number of such students will be doubled. This will be accomplished by a separate group of not more than 18, rather than increasing the size of the present group. In order to make similar training available to smaller businesses, which cannot afford to do without the services of a key man for a year, in the summer of 1953, a three-week course will start which will, in successive years, cover the main important segments of the 12-month executive development program. The initial group of about 25 men will have presented to them "Accounting for Management."

The School is in the process of being built up and its faculty has not been com-

pleted. Thus far, in addition to the Course XV faculty, Dean Brooks has added several senior posts. He has also set up "task forces" which have studied various phases of the program. Dean Brooks emphasized that the course of study in the School would not be static in either form or subject matter, but would be changed continually in an effort to provide the best available training for students interested in entering the broad field of industrial management. — CHENERY SALMON'26, *Secretary*, The Merchants National Bank, Securities Analysis Department, 28 State Street, Boston, Mass.

### *M.I.T. Club of Chicago*

In keeping with the Club's tradition of providing the membership with technical programs and plant trips of vital interest, Club President John Praetz'28 arranged with the Commonwealth Edison Company for a club trip through the new Ridgeland Generating Station. The trip was set for Saturday morning, December 6, and a fine turnout of over 100 club members and their guests took advantage of this opportunity to see the most modern electric power generating station in the world. The plant utilizes complete push-button control from a central control room which includes television for water level control. The entire plant presents the cleanliness of a well-scrubbed cafeteria. The club members were cordially welcomed and treated to a movie on the plant operation before splitting into small groups for guided tours of the plant.

For some years the Club had discussed the desirability of holding a meeting during the Christmas holidays for the students presently attending the Institute from the Chicago area. This year the plans were given an enthusiastic go-ahead by the Club's officers and directors. Under the direction of Luncheon Chairman Bruce Humphreville'26 and Jim Newman'37, arrangements were made to hold the luncheon on December 30 at the Western Society of Engineers, and invitations were mailed to Chicago area students and their parents. In addition, Robert J. Hinds'53, a member of this year's graduating class and President of the Phi Mu Delta Fraternity, was asked to be the speaker of the day.

For the second time this year, the response to a club function exceeded expectation and the splendid turnout, which included 42 M.I.T. and six high school students, taxed the capacity of the dining hall. Seated at the head table were James Barker'07, John Barriger'21, Louis Bouscaren'04, Robert Hinds'53, Herbert Kochs'25, Richard Meyer'42, John Praetz'28, and Robert Reebie'43. At the last minute, arrangements were made to include in the program the new RKO Pathe movie, *Men of Science*, which is based on M.I.T. Since the entire program was so well received,

it is likely that the student luncheon will become an annual event.

The saying goes that there is no bad without some good; however, the good and bad are not always shared by the same people. In this case the loss to the M.I.T. Club of Chicago and the Monon Railroad is the gain of M.I.T. and its alumni group in Boston, and the New York, New Haven, and Hartford Railroad. The acceptance by President John Barriger'21 of the Monon of a new vice-president's position with the New York, New Haven, and Hartford Railroad, leaves a large hole to be filled in the M.I.T. Club of Chicago. Because of the sincere and deep appreciation felt by our membership for Mr. Barriger's efforts in behalf of the Club in the past, the Club presented him with one of the M.I.T. chairs at the student luncheon. In fact Mr. Barriger was seated in the chair at the head table throughout the luncheon and became aware that the chair was to be his only when President John Praetz so told him during the presentation speech. Our best wishes follow Mr. and Mrs. Barriger to Boston where their great interests and energies will be of great value.

Club activities for the remainder of the year include a dinner meeting during February with Robert Vogeler'37 as speaker, a plant trip in March through the new factories of the Hotpoint Company, and President Killian's dinner on April 30. In addition, this year the Club is publishing a directory of its 1,000-odd members — ROBERT S. REEBIE'43, *Secretary*, Reebie Storage and Moving Company, 2325 North Clark Street, Chicago 14, Ill.

### *M.I.T. Association Of Cleveland*

The annual Christmas luncheon was held for the current students of the Institute on December 23, 1952, at the University Club, and we had one of the largest turnouts we have ever had for this annual affair. As usual, most of the pre-luncheon and table conversation surrounded the activities of the students, and our meeting was an opportunity for the younger men to associate with the Alumni of this area, and to realize that we do have an active association. The meeting was led by Howard Ferguson'27, the Association's President, supported by Royal C. Riedinger, Jr., '54, who acted as chairman of the student group.

The following were in attendance: W. L. Smith'10, W. C. Brown'16, A. I. Bradley'21, F. H. Wood'22, R. H. Smith'23, W. H. Robinson'24, W. C. Sessions'26, H. P. Ferguson'27, R. D. Knight'31, M. M. O'Brien'32, J. F. Keithley'37, H. A. Zimmerman'37, G. R. Young'37, F. W. Reuter'38, W. R. Stern'40, L. D. Fykse'41, L. C. Turnock, Jr.'41, James McIntosh, 10-44, J. H. Kellogg, 10-44, C. E. Leising, 9-46, R. J. De Fasselle, 9-46, E. P. Klipfel'48, R. L. King'49, Kent Moore'50, W. K.

Geist'50, Franz Hirschfeld'53, A. L. Zesiger'51, P. H. Spengler'52, J. S. Kaufman'53, John R. O'Donnell'53, H. Allen Curtis'53, R. C. Riedinger, Jr.'54, R. J. McLaughlin'54, W. L. Hartrick'54, George Inada'54, I. M. Williams'54, A. L. Zuker'55, F. R. Morgenthaler'55, A. R. Schieb, E. F. Wahl'55, Lawrence Hitchcock'55, W. T. Deibel'55, D. O. Churchill'55, W. M. Fitzgibbon'56, D. R. S. Seidman'56, J. E. P. Davis'56, and C. Ranney, a guest. — G. RICHARD YOUNG'37, *Secretary*, The Weatherhead Company, 131st Street, Cleveland 8, Ohio.

### **Indiana Association of the M.I.T.**

Frank Travers'23, our able Club President, had the happy thought of a special luncheon meeting during the holidays to which we invited as our club guests M.I.T. students whose homes are in Indianapolis. There are six students in this category and all accepted our invitation, except one who had to return to M.I.T. before the meeting. The students attending were: Lew W. Dunham, Jr.'56; Richard J. Farrar, G.; Ward D. Halverson'56; Dick McCammon'55; and Dan McNally'54.

The luncheon was served at the Indianapolis Athletic Club in a private parlor to a group of 21, including the five student guests. Frank apparently subscribes to the theory that one should sing for his supper, so he called on each of the guests for a few remarks about the Institute. We appreciated the comments from each man and were impressed with the poise and self-assurance shown by each in making these extemporaneous remarks. I believe the boys enjoyed this meeting, and I know the club members did. — J. RAYMOND RAMSEY'17, *Secretary-Treasurer*, 511 Spruce Street, Plainfield, Ind.

### **M.I.T. Club of the Lehigh Valley**

The winter meeting of the Club was held on January 8 at the Hotel Bethlehem. Although every effort had been made to convince Don Severance'38 that he should have come down a week later, he insisted on coming on January 8 and brought a terrific ice storm with him. However, in spite of ice, sleet, and so on, 16 of us had dinner, watched the RKO film, *Men of Science*, and had a grand bull session on M.I.T. with Don. Among those attending were Jim Emery'38, Henry Moggio'28, Hugh Brenan'25, Wilder Moffatt'38, Wiley Post'36, Al Zettlemoyer'41, Jim Eppes'50, Bill Bassett'39, Hugh Graham'47, Preston Parr, 2-46, Jim Stengel'50, Mal Blake'25, Don Blickwede'48, and Jack Briggs'42.

Considerable interest was shown in the Sloan School of Industrial Management. Don Severance very capably answered our questions respecting the changes in policy and in courses at M.I.T. To most of us, it is very difficult to keep up with the vast growth in the physical plant and enrollment at the Institute unless we have visited Cambridge recently. Having Don spend an evening with us was an excellent substitute for such a trip. The film, *Men of Science*, was an interesting, but somewhat dramatic, film of activities at the Institute. We are hoping to schedule an

extra meeting this year if we can persuade George Meyers'29 to give us a talk on his recent trip to Germany to survey industry there. — JOHN D. BRIGGS'42, *Secretary*, 131 Wall Street, Bethlehem, Pa.

### **M.I.T. Club of Milwaukee**

A group of M.I.T. students, home for the holidays, were the guests of the Club at a luncheon held at the Wisconsin Club on December 29. There were no speakers at the luncheon. It was just a pleasant meeting of the Alumni with the future Alumni. The following students were present: Michael Alexander'53, Robert Bertelson, G., Robert Cotton'53, James Dwyer'54, Richard Fix, G., Rodger Foltz'56, Dean Karnopp'56, John Koch'53, John Lindenlaub'55, Richard Lyke'54, Kenneth Maas'56, Carl Scheid'53, Carl Schroeder'53, and Herbert Voss, G.

The following Alumni were also present: John Ballard'35, William Bohlman'49, Frank Briber'43, Fred Gruner'41, A. E. Jakel, 2-44, Harold Koch'22, Hiram Lyke'29, Chester Meyer'36, John Monday'51, Munir Rafi'52, Dr. L. D. Smith'06, C. L. Sollenberger, 10-44, and Emerson Van Patten'24. — CHARLES L. SOLENERBERGER, 10-44, *Secretary*, Research Laboratories, Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

### **M.I.T. Club of Monterrey**

The Club was fortunate to have H. E. Lobdell'17 as guest on the evening of December 17 at the Casino do Monterrey. He announced the visit of President Killian ('26) and Mrs. Killian to our Club, by the first week of February. Everybody was happy to hear so and made suggestions to make the reception of the kind that Dr. and Mrs. Killian deserve.

The following members were at the dinner: R. F. Barrera'49, Eliot Camarena, 2-44, J. Celada Salmon, 2-44, H. S. Dutton'48, Bernardo Elosua'23, G. A. Flume'47, Eugenio Garza-Sada'14, Roberto Garza-Sada'18, Yo Kun Pei'43, M. R. Llaguno Farias, 6-46, Lauro Martinez-Carranza'20, Hernan Rocha Garza'48, Raul Sada'49, Leonardo Siller'28. — ELIOT CAMARENA, 2-44, *Secretary*, Apdo. 118, Monterrey, N.L., Mexico

### **M.I.T. Club of Northern New Jersey**

The Club will have held its winter meeting on January 29 by the time these notes appear, and this meeting will be reported in detail in the April issue. At the time of writing, the Program Committee has turned its attention to Ladies Night, scheduled tentatively for April 8. Under the chairmanship of Stuart G. Stearns'39, the Committee, including Donald H. Spitzli'27 and Fletcher P. Thornton, Jr.'36, is working on two possible alternatives, either of which should have much appeal.

Other club activities have started to pick up again after Christmas holiday interruptions. The Scholarship Committee, of which Donald D. Way'19 is chairman, is beginning to receive applications for prospective candidates for regional schol-

arships. The Educational Council, under Everett W. Vilett'22 and Sumner Hayward'21, must of necessity feel its way in its new venture and is engaged in making contacts and entrees to promote M.I.T. in New Jersey. H. D. MacDonald'22, as chairman of placement, is ready at all times to hear from companies or people seeking M.I.T. men or from fellow M.I.T. Alumni who may be seeking new opportunities and new connections. The House Committee (A. Donald Green'26, Clarence Van C. Chamberlin'23, George J. Saliba'27) is lining up arrangements for our January 29 meeting in East Orange, and the Attendance and Reception Committee under Chester A. Williams, Jr.'39, likewise is busy getting out the attendance for the January meeting.

The Publicity Committee, which is a new organization this year, has widened its membership since last report and now considers itself complete with the following roster: Jack F. Andrews'33, chairman, Peter B. Baker'50, Emerson Callahan'48, Edward M. Coan'47, William S. LaLonde, Jr.'23, George F. Des Marais'20, Newton S. Foster'28, A. Donald Green'26, Warren J. King'48, Robert T. Leadbetter'31, Edwin S. Lockwood'21, Rudolph J. Ozol'36, George J. Saliba'27, W. Bennett Sharp, Jr.'36, Donald H. Spitzli'27, Chester A. Williams, Jr.'39.

To any and all M.I.T. Alumni newly moved into the northern New Jersey area, the Club extends a cordial invitation to attend club meetings and to affiliate with the Club as an active or sustaining member. A note to our Treasurer, Joseph Wenick'21, 37 Cedars Road, Caldwell, N. J., accompanied by a check for \$3.00 for active membership, or \$10.00 for sustaining membership (sustaining membership dues completely cover all club events without further expense to the member), will put you on our membership rolls and will bring notices of all club activities. Next meeting will be on April 8 or thereabouts and another on June 2. — RUSSELL P. WESTERHOFF'27, *Secretary*, 823 East 23rd Street, Paterson, N.J. JACK F. ANDREWS'33, *Assistant Secretary*, 209 Tuttle Parkway, Westfield, N.J.

### **M.I.T. Club of Panama**

The Club held a dinner meeting at the Hotel Panama in Panama City, Republic of Panama, on Friday, December 5. Those attending the dinner were Manuel Arosemena'45, Jaime Berrocal'47, Richard R. Brown'35, Manuel Calderon'30, Constant W. Chase, Jr.'34, Sixto E. Duran-Ballen'23, Fernando Eleta'47, Carlos Fabrega'35, Eduardo Icaza A.'23, Harold Fernandes'47, Mrs. Donald W. Noble'36, Manuel V. Patino'29, and Titos Theoktistou'48.

An invitation was received from Fernando Eleta'47 to hold a day's outing at his country home at Cermeno on the first Sunday in March. — CONSTANT W. CHASE, Jr.'34, *Secretary*, Box 77, Balboa Heights, Canal Zone

### **M.I.T. Club of St. Louis**

On November 6, 1952, the Club held its annual meeting at the Congress Hotel



in St. Louis. Cocktails and dinner preceded the business meeting, at which retiring President Ellis C. Littmann'33 presided. President Littman reviewed the activities of the Club during 1952. On December 11, 1951, P. M. Chalmers, Associate Professor of English, visited with some of the St. Louis Alumni; on November 26, 1951, Professor Gaudin had luncheon with a number of the Alumni at the Noonday Club; February 1, 1952, Professor Bolt was our guest speaker at a dinner meeting; April 25, 1952, a smoker was held at the home of Robert Joyce'28; June 28, 1952, the St. Louis Club had its annual picnic on the estate of Joseph Desloge'12.

Following this review by President Littman, the Club received a report from the Nominating Committee, Irv R. Mitchell'30, Milton Lief'37, and John E. Taylor, 2-46. The following nominations were made and accepted by the Club: Laurence P. Russe'41, President; John D. Sweeney'33, Vice-president; William A. Hanpeter, 9-46, Secretary-Treasurer; Alvin M. Mendle'39, and Robert L. Morton'24, Board of Governors.

Those members of the Club who were present at this meeting voted to add the following paragraph to Article 9 of the bylaws of the Club: "A member, regardless of the number of years out of M.I.T., who desires to contribute, and does contribute, ten dollars as dues, will be known as a sustaining member of the St. Louis M.I.T. Club. Dues so collected will become a part of the General Treasury." Alvin M. Mendle'39 and Edward A. Fulton'30 became the first sustaining members.

Following the business meeting we enjoyed several color films on wild life and hunting, shown through the courtesy of Robert Keating'42 and his employer, Olin Industries, Inc., East Alton, Ill.

The following members were present at this meeting: Arthur W. Baker'26, H. T. Blake'29, Ralph M. Chambers, Jr.'40, Leonard K. Cowie'22, Robert Edholm'45, Paul Ely, 2-44, Richard H. Ewert'37, Lawrence B. Feagin'24, Edward A. Fulton'30, Edwin J. Grayson'17, William A. Hanneter, 9-46, Homer V. Howes'20, William F. Hecker'42, Robert W. Keating'42, Wylie Kirkpatrick'40, David G. Koback'47, Milton Lief'37, Ellis C. Littman'33, C. Rogers McCullough'22, Thomas O. McNearney, Jr.'48, Kenneth A. Marshall'47, Alvin M. Mendle'39, I. R. Mitchell'30, Robert L. Morton, Jr.'24, John Noyes, Jr.'38, Alexander J. Pastene'13, Ryder Pratt'39, Laurence P. Russe'41, Henry C. Sharp, Jr.'50, John D. Sweeney'33, Charles W. Taylor'29, and David Q. Wells'30. — WILLIAM A. HANPETER, 9-46, Secretary-Treasurer, 1502 St. Louis Avenue, St. Louis 6, Mo.

### M.I.T. Club of Schenectady

The Schenectady Club has held three fall and winter meetings — October 14, November 11, and December 9. Meetings are held on the second Tuesday of each month at Ferro's Restaurant. The theme for the meetings has been "Civic Affairs, Local, National, and International."

At the first meeting, David Prince, Democratic candidate for Congress, spoke on "The Necessity for Engineers in Government." The discussion centered on the budget for military expenses, and Mr. Prince pointed out that there were only two engineers in Congress who could speak with authority on the expenditures for technical equipment.

At the November 11 meeting, Maynard Boring, manager of technical personnel, spoke on "Engineering Education." Mr. Boring stated that there is a tremendous shortage of engineers. He advocated better use of engineering talent, and programs to interest high school students in pursuing an engineering education. At our December 9 meeting, Morris Cohn, City Manager of Schenectady, talked about city financing. This was a very timely subject, as the city is now hard pressed financially and is seeking additional sources of revenue. A lively discussion followed his talk.

There were between 30 and 45 members present at each meeting. — JAMES E. ACKER'38, Secretary, 24 Ellen Lane, Scotia 2, N.Y.

## CLASS NOTES

### • 1886 •

At Christmas, your Secretary mailed greeting cards to all the known living members of '86 M.I.T. and S.M.A., suggesting that some word for either the '86 class notes or the '86 financial record be sent him. As a result (supposedly), he caught two victims to whom receipts have been sent. (Any further receipts will be acknowledged in later issues of The Review.) The two members referred to are Wilson Low and W. F. Jordan. Low says he hasn't played golf for about a year, because of an accident, but will resume his game on the return of warm weather. He says he would like to know how many of the Class of '86 are "still on earth."

As others of the Class may be interested in the same information, the list, as of January 1, 1953 (E and OE), follows: M.I.T. — Buswell, Campbell, Chase, A. T., Chase, William C., Coffin, Gamwell, Ingalls, Jordan, Low, Mackintosh, Pierce, E. L., and Prescott. S.M.A. — Benson, Holmes, Killinger, McGraw, and Noble. Jordan writes that he has nothing of interest to report, that he is taking it easy because of a heart attack four years ago. The doctor tells him not to climb hills and to use stairs as little as possible. Because of these two affluent members, a small balance from 1952, and a little assistance from the Secretary, our treasury boasts \$27.00, plus, which should last nearly through March. Any more "victims" in the offing to carry us through to July? — ARTHUR T. CHASE, Secretary, Post Office Box 4, Island Creek, Mass.

### • 1890 •

George Packard is back in Florida; this time at 141 Ridgewood Drive, Winter Park. Before leaving he telephoned two

of our classmates, Burley and Sherman, who were not very well at the time of the June reunion. Both were in much better condition, though Sherman continues to have considerable trouble with arthritis. Burley reports his ankle, which has been a serious discomfort, is much improved; his voice sounded strong and clear as it has when his health was good.

Karl Hyde passed away at Attleboro, Mass., December 13, 1952. He cut short his studies at M.I.T. to accept a job with the Boston and Providence Railroad which was rebuilding all of its bridges. After a few years, he left the railroad to become city engineer of Nashua, N.H., and later went to Attleboro, Mass., on engineering work, remaining there for the rest of his life and acquiring an interest in the Attleboro Ice Company, the City Coal Company, and other concerns. From the Attleboro Sun we learn that he was interested in the development of Capron Park and served as a member of the first park commission. He had declined to come to our 50th and 60th reunions because he felt he was so out of touch. Nevertheless, he had been a contributor to Technology funds. — GEORGE A. PACKARD, Secretary, 53 State Street, Boston 9, Mass. CHARLES W. SHERMAN, Assistant Secretary, 16 Myrtle Street, Belmont 78, Mass.

### • 1895 •

Last December we had the pleasure of a semiannual report from Judson C. Dickerman on his life, liberty, and happiness during the progress of his blossoming later years. We note the following: Last summer and fall, Judson and his daughter, Eleanor, went to Lake Chautauqua, N.Y. — via auto — to enjoy the activities there, and, incidentally, to call on family relatives en route. Returning they inspected Bryn Mawr College, near Philadelphia, where later Mrs. Dickerman and Judson entered their daughter as a freshman. You will recall Dick always wore heavy-lens glasses; he was a constant reader and used his eyes as much as he did his head. Some time ago he developed a cataract on his right eye, and removal was successfully performed at the University of Virginia Hospital last November. Unanticipated, an enlarged gland caused acute trouble, finally necessitating an abdominal operation, so he became a "guest" of the hospital for four weeks and four days. He was discharged with a clear bill of health. Only time is necessary to restore full and efficient eyesight.

Dickerman's hobbies are flower raising and postage stamp collecting, with music in between. He still sings in the church choir, appears occasionally in opera, and, living in Charlottesville, has the opportunity of enjoying the many intellectual, musical, and dramatic activities provided in the community. To note one of his garden propensities, the seven goldfish in the outdoor pool increased during the past year to 25 — a great success in propagation. Our best wishes to Dick for full and efficient eye recovery.

Your Secretary recorded in the last Review the fact of his 80th birthday, as of September 1, 1952. This month he is more than pleased to announce the celebration

of Mr. and Mrs. Luther K. Yoder's 50th Wedding Anniversary, January 7, 1953. Only those who are blessed with the many experiences of 50 years of happy, wedded life, can attest to the day as a memorable event of a lifetime. Mrs. Yoder conceived the idea of a luncheon to be held for those of the original wedding party of 50 years ago, and found eight of the original 14 still living. Six of these were able to attend, and with the family — Mr. and Mrs. Morton Yoder as guests of honor — we had a party of eight. The event was celebrated at the Hotel Statler, Boston. Yours truly cut the Golden Wedding Cake. It was a great day!

During the winter you will find Joseph Walworth at his usual resort, Lake Side Inn, Mt. Dora, Fla. Charles F. Eveleth was living in Cleveland, Ohio, but is now located in Concord, Mass., Post Office Box 41. Well, mates, honestly, I'll pay the postage if you will drop me a line. All of us will be glad to hear from you. — LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass.

### • 1896 •

Upon receipt of the March Review, we will have enjoyed the Caribbean and Florida trips and may have made plans for the Coronation. We will have been introduced to the new administration's promises, and we will have had time to digest the caliber of our Washington faculty and reset our sights for the long pull forward. For these various changes incident to the Eisenhower administration, we should be deeply grateful. Addressing you as a physician, our patient is so frustrated and depleted in both physical and moral equipment that we must combine the best that is in all of us, regardless of party or faith, if we shall hope to enjoy the possibilities of liberty. The Korean War must be settled, without losing face, in a military, economical, and righteous manner. Our implements, as members of the Class of '96, could be, and should be, of great assistance to the new administration.

Lacking material for class notes for this issue, we ventured the opinions above expressed, and trust that some of you will supply your Secretaries with class material and thus avoid similar observations in our next issue. We have heard, with sporadic regularity, from some of our classmates. At this writing, all goes relatively well with the New England group insofar as we have been able to determine. Fred Damon is making progress along the arthritic road, and hopes to join me in attending the New York dinner.

From Perry Howard comes this note to the Secretary, written January 22 from 31 Katherine Road, Watertown, Mass.: "Within a little more than an hour from the time you were talking with Ruth, I received the very beautiful flowers which you sent on behalf of '96. It was a complete surprise to me, as I had not thought of anything of the kind. However, being somewhat human, I was greatly pleased and I want to thank you and the boys for the flowers and the thought. It is a wonderful thing to have friends."

It is our unpleasant duty to report the death of a '96 classmate: Joseph W.

Stickney died on January 9, and from a newspaper clipping we take the following biographical data: "Joseph W. Stickney, 78, who died . . . in his apartment at 3025 N. Meridian, had wide business experience and had been president of the Indianapolis Athletic Club since 1932. Born at Summersworth, N.H., Mr. Stickney was graduated from the Phillips Exeter Preparatory School in 1892, and from . . . Technology in 1896.

"Mr. Stickney's first venture into the business world was with the American Telephone and Telegraph Co. in New York. In 1902, he was transferred to Indianapolis, to serve with the Central Union Telephone Co., predecessor of the present Indiana Bell Telephone Co. After serving a few years as district manager for the company at Anderson, he was returned to Indianapolis as general manager here. During World War I, Mr. Stickney served as personnel director for the Marmon Motor Car Co., which was manufacturing Liberty motors. Afterward he was in charge of insurance for the Fletcher-American Co.

"Several years ago, Mr. Stickney organized the Stickney Agency, dealing in general insurance and maintained his office many years in the American National Bank Building. Mr. Stickney's long and meritorious career with the Indianapolis Athletic Club began in 1930, when he was named chairman of the house committee. Two years later he became the club's sixth president.

"Secretary many years of the Indianapolis Insurance Board, Mr. Stickney was a member of Trinity Episcopal Church, the Indiana Bell Telephone Pioneers and the M.I.T. Alumni Association.

"Survivors are the widow, Mrs. Jessie C. Stickney, and a daughter, Mrs. Lorenz O. Schmidt." The sympathy of the Class goes out to Joseph Stickney's family. Every good wish for your spring and summer plans. — JOHN A. ROCKWELL, *Secretary*, 24 Garden Street, Cambridge, Mass. FREDERICK W. DAMON, *Assistant Secretary*, Hotel Commander, Cambridge 38, Mass.

### • 1897 •

Proctor L. Dougherty was a member of the General Inaugural Committee in Washington, so we can assume that the success of the inauguration was due in part to the efforts of a '97 man. Twenty years ago, Proctor served on the same committee.

We have received notice, without any particulars, of the death on November 7, 1952, of George M. Goodspeed, Course V. George was retired and lived at 1818 Packer Street, McKeesport, Pa.

A letter written January 8 from Jere Daniell up in Franklin, N.H., states that there is nothing new up in the north country. He had had but a few hours skating on nearby Webster Lake when snow came to spoil it. How many of the Class aside from Harry Pugh, who is an expert at the job, have the ambition or strength sufficient to skate? Two days after Jere's letter was written, a heavy snowstorm came and we doubt if Jere could even find that lake of his. He enclosed a letter from William R. Wood, Course XIII, retired,

who lives in Danville, Calif., and we have been given permission to quote from it, in part: "Received a post card from you last June relative to a lunch you and some 'relics' of the Class of '97 were having, 'wished you were here,' and so on. Intended to drop you a line before this date [December 21, 1952].

"Do I hear any remarks about a place paved with good intentions and suggesting that the name might be California? Contra Costa County, in which Danville is located, got into the hall of fame (or infame) by being the only county in the state that went for Stevenson. This state is still booming. Personally I don't like it, but you know what I can do about it. Subdivisions, homes, children, schools, sanitary facilities, fire protection, roads, and so on, and the end is not yet. We pay for them with the hope that all will end well. From a purely selfish point of view, our biggest headache is the auto traffic. You can drive calmly and carefully, and many times you can dodge, but you have no chance against a bird who gets on the wrong side of the road.

"The election of Eisenhower pleased me very much. I don't envy him the job, and hope that the men around him will turn out to be as good as they seem to be now. What should we do now that we are great-grandparents? We had a golden wedding fiesta not long ago, but we do not know of any suitable celebration for being great-grandparents."

We have two suggestions to make to William now that he is a great-grandfather. One is that he equip himself with a pair of carpet slippers and a cane, and use them. The other is that he purchase a season ticket to an all-night club and use it. Your Secretary has known of each of the above types of great-grandparents. We would also advise William that it was a lively group of "relics" that assembled at that luncheon last June. We wish he could have been with us. When we have a similar luncheon next June, we wish that he would send us one of his very interesting letters to be read to the fellows. — JOHN A. COLLINS, JR., *Secretary*, 20 Quincy Street, Lawrence, Mass.

### • 1898 •

The Class of '98 is on the move this winter, that is, those members we have heard from. Jean and Arthur Blanchard, after voting last fall in Brookline, Mass., with happy results we may add parenthetically, motored to their winter home, the Lake Shore Plantation Inn, Lake Wales, Fla. Accompanying them was Professor Emeritus Miles Sherrill '99 (members of '99 please note. All know genial Miles). A card depicting a pleasant, attractively furnished dining room states: "Had a nice trip down. Miles returns December 1. Has been with us three weeks. Many old friends back." '98 friends are cordially invited; and if you are thinking of going, better write in advance, as the resort is very popular.

Roger Babson is at his winter home, Mountain Park, Fla. More about Roger and the Babson organizations later. George Cottle, for his winter vacation, will leave Boston the first of February for a tour



through the Leeward Islands (or Lesser Antilles), or what will you. George will tell us all about it with wonderful pictures, we know, at the 55th. So get started, '98. George will return via Florida to visit old friends.

Lilian and Al Davis are spending their winter in the vicinity of Albuquerque, N.M., a region which they enjoy greatly. Their summer home is at Randolph, N.H.; and between whiles they are at home at Waterbury, Conn. President Edgerly is off on an Oriental cruise, leaving San Francisco the first of February, and in the next two months he will visit the Hawaiian Islands, Japan, the Philippines, and other intermediate spots. Have a good trip, Dan, and tell us all about it in a presidential letter or at the 55th. You know these travelers have got the Secretary looking all over the maps of the world, and especially the spelling! My!

We have been informed of the passing within the Unseen Temple of the following classmates: David H. MacFarlane on February 1, 1950; Walter H. Lee on November 9, 1952; and Lyman Arnold on December 27, 1952. We have a brief obituary notice about Walter Lee, and expect further details for a later issue of *The Review*. We have no particulars concerning the other two classmates, and would appreciate further information.

Speaking about obituaries, you will all remember Mark Twain's celebrated remark that the notice of his death was greatly exaggerated. Well, we have a similar case in '98. Presidential letter No. 11 to Edward M. Taylor was returned marked "Deceased." Later Dan wrote us: "Disregard my note about E. M. Taylor. I have received a letter from the Du Pont Company that he is very much alive." A lively correspondence then ensued between Dan and Ed, and Dan writes: "Many will remember Ed from the olden days at the Technology Club in Gramercy Park, New York. Early in the twenties he went with Du Pont at Wilmington, Del., as vice-president and managing director of the Du Pont Building Corporation, also director of the Du Pont Hotel Company. He retired in 1941 and is now living at the Du Pont Hotel, Wilmington. Ed has three children. A married daughter resides in Wilmington; one son is president of the Reeves Taylor Lumber Company of Eugene, Ore.; another son is with the Glenn Martin Company, Baltimore. I knew Ed quite well in the early years in New York City. Also called on him a couple of times in Wilmington. In retrospect: How time does fly!"

Every now and then in our reading we come across a discovery. Listen to this from *Light From the Ancient Past*, a remarkable book, 500-odd pages, by Professor Jack Finegan of the Iowa State College. In the preface, Professor Finegan states: "I wish to express appreciation to those who have given encouragement and counsel relative to bringing the work to publication, including . . . President Emeritus Raymond M. Hughes . . ." Raymond M. Hughes '98, I take it.

Among the many clippings we have received concerning our distinguished classmate, Roger Babson, and the Babson

organizations, we have picked out for this issue of class notes the following two: From the *Christian Science Monitor* of December 1, 1952: "New York Student Wins \$1,000 Prize For Gravity Essay. New Boston, N.H. The Gravity Research Foundation's fourth annual \$1,000 prize has been awarded to a College of the City of New York engineering student, it was announced here. Foundation President George M. Rideout said that Gabor Strasser of New York City won the prize for an essay titled: 'Gravity and the Dimensional Constant "G".' Mr. Rideout said that the youthful essayist questioned the constant 'G' used in computations involving Sir Isaac Newton's law of gravity. Five persons won \$100 prizes for their essays. They were Mulaika Barclay, Berkeley, Calif.; Irwin Tessman, Sloane Physics Laboratory, Yale University; Martin B. Perl, Columbia University; B. P. Blasinghame, Arlington, Va.; and Forrest Carter, California Institute of Technology."

From the *News*, Newburyport, Mass., of December 12, 1952: "Daily News Will Publish Babson Forecast Dec. 31. The Daily News will publish Roger W. Babson's 'Business and Financial Outlook for 1953' on Dec. 31. Mr. Babson's 1953 Outlook will contain outstanding Forecasts covering such important topics as general business, commodity prices, taxes, trade, labor, inflation, farm outlook, stock market, real estate, politics. Mr. Babson — a pioneer in the field of business and financial statistics — enjoys an unusual record of accuracy in his Annual Forecasts. His score for 1952 was 88 per cent accurate. On December 27, 1951, he predicted: (1) that World War III would not start during 1952; (2) that the Taft-Hartley Law would not be repealed during 1952; (3) that there would not be an increase in corporation and personal taxes; (4) that the National Income for 1952 would continue very high.

"American business has no more inspiring personality than Roger W. Babson, internationally-known business commentator and investment adviser. An outstanding feature of his philosophy has been his life-long insistence on the importance of religion in business. Born and reared in an old-fashioned atmosphere of hard work and hustle on a farm in Gloucester, Mr. Babson went to . . . Technology. Upon graduating he turned instinctively to financial and business activities. His exertions, however, undermined his health; he contracted tuberculosis and he was sent West 'as good as dead!' It was while he was convalescing from this dread malady that he worked out some of the possibilities and problems of business forecasting. His weekly releases are used by over 400 newspapers and his financial reports by 20,000 corporations and estates. His research work is carried on by a large staff of workers.

"Mr. Babson founded Babson Institute for Men; and, in cooperation with Mrs. Babson, developed Webber College for Women, — both nationally-known educational institutions. Here young men and women may concentrate on the fundamentals of business administration. Later, he founded Utopia College, located in

Eureka, Kansas, the center of the United States. Recently he has been active in the establishment of another medium of service to the public, the Gravity Research Foundation, located at New Boston, New Hampshire. Mr. Babson has probably done more than any other man to create among his millions of newspaper readers an interest in simple business problems, and to instill a broader vision in businessmen, enabling them to meet the ups-and-downs of the business cycle."

Finally, we wish to thank the classmates who sent us holiday greetings; and finally, remember the 55th. — EDWARD S. CHAPIN, *Secretary*, 463 Commercial Street, Boston 13, Mass. ELLIOTT R. BARKER, *Assistant Secretary*, 20 Lombard Road, Arlington, Mass.

## • 1899 •

When I went to West Orange, N.J., to be with my son, Leighton (M.I.T. '33), and his family for the Christmas holidays, I discovered that I was only five or six miles from Henry P. James, VI, who moved to Summit, N.J., recently. As I had not seen Henry since commencement in 1899, I called him on the telephone and then drove over to his daughter's house to see him. We crammed some of the main events of the last 53 years into a little over an hour, which is some talk-fest. He has had a most interesting career, and finally promised me an outline in the near future.

Ralph Loud's funeral was held in the chapel at Mount Auburn Cemetery, Cambridge, on December 17. The Class was represented by Miles S. Richmond and Miles S. Sherrill. While a student at Tech, Ralph worked part time for his uncle, who was town engineer of Brookline. After graduation Ralph went with the service division of the Metropolitan Sewage Commission. About 10 years later he became a member of the engineering staff on the Cambridge Subway, where he stayed until the subway was completed in 1912. He then became engineer for the towns of Needham and Brookline, but later returned to the Metropolitan District Sewage Commission. He retired in 1946. — BURT R. RICKARDS, *Secretary*, 381 State Street, Albany, N.Y. MILES S. RICHMOND, *Assistant Secretary*, 201 Devonshire Street, Boston, Mass.

## • 1900 •

Some months ago, we noted the death of Percy True. Philip Ripley has since received a letter from Percy's sister who lives in Carmel, Calif. She writes: "Yes, I must be one of the sisters, for Percy only had two. I've just received your nice letter on returning from a trip. I've been living with him here and in Elgin, Ill., for the last 20 years. Neither Percy nor I married, so we made our home together. Percy retired from the Elgin National Watch Company where he worked (in the research department all the latter years) for 35 years. On his retirement in 1940, we came to Carmel and have lived here ever since. He loved it here for I think the rocky coast made him think of New England and Maine. He was not ill long

and passed away with a heart attack. He could not recover from various complications so it was merciful for him that he could go so quickly."

Harry Chalmers sent us a note at Christmas with a photograph that indicates that he has 12 grandchildren. That beats your Secretary's 10. Can any one claim more? Let's have a poll! Harry also enclosed a note from Cliff Leonard from Camden, S.C. We wish that Cliff would send us some word of himself.

We have received word, without any details, of the death of the following: Percival C. Clow, Glen Park, N.J., on April 16, 1952; Joseph P. Allen, Jr., Crawfordsville, Ind., on July 6, 1952; and William L. Stevens, Noranda Mines, Noranda, Quebec, on October 13, 1952. Otherwise class news is very scarce and would be very acceptable to — ELBERT G. ALLEN, *Secretary*, 11 Richfield Road, West Newton 65, Mass.

## • 1901 •

When you read these notes I hope that you will have received the class letter which, to my relief, was much abbreviated compared with those of former years. You all read the notes in *The Review*, which made it unnecessary for me to repeat them.

I reported the death of Farnum Dorsey in the November notes. Since then I have received a letter from Mrs. Dorsey, from which I quote: "It is my sad duty to inform you that my good husband, Farnum F. Dorsey, passed away on June 25. For many years he had been handicapped by a rare disease — Steinert's Disease — a disease of nerves and muscles. He was up and about until the day before he died, of a coronary thrombosis, but crutches, a wheel chair, and an elevator were needed to help him through each day."

Ed Fleming writes me from Los Angeles: "I retired February, 1950, from American Smelting and Refining Company but am still retained by them as a part-time consultant. This, and tournament bridge, as well as occasional travel with wife and daughter, keep me well occupied. At present have no news about any other members of our Class, but note by the Register that there are several in this locality whom I will try and contact. Sorry I was unable to attend the 50th reunion but will try and make the 55th."

From Mrs. Peterson I learn that she heard recently from Roger and Mrs. Wight in Harwich Port, Mass. Both are well but would like to take a trip somewhere. Bob Williams wrote her that his winter address is now Norwichtown, Conn., instead of North Haven. He is living with his daughter. Another item from Mrs. Peterson states that Charles and Mrs. Bittinger motored down to call on George Marsh and his cat, Felix. He said that the cat was on his good behavior and drank milk from a cup and then smiled at his master.

Don't forget to respond to Al Higgins' appeal for the Alumni Fund as well as to send in your class dues to build up a fund for our 55th reunion. — THEODORE H. TAFT, *Secretary*, East Jaffrey, N.H. WILLARD W. DOW, *Assistant Secretary*, 287 Oakland Street, Wellesley Hills 82, Mass.

## • 1903 •

Mrs. Ivah Richardson Cushman, the wife of James Cushman, one of the Class Secretaries of 1903, died at Wellfleet, Mass., on December 15. Mrs. Cushman was born in Lowell, Mass., the daughter of the late Charles H. and Clara Pray Richardson. She lived in Worcester 25 years before moving to Wellfleet in 1947. At Wellfleet, she took an active part in the Fireside Club and the Sunday schools at Tatnuck Congregational and Central Congregational Churches.

She will be mourned by all those members of the Class of 1903 who have had the pleasure of meeting her at the M.I.T. reunions or elsewhere. — FREDERIC A. EUSTIS, *Secretary*, 131 State Street, Boston 9, Mass.

Your Secretaries are busy at this time, January 15, getting out letters in regard to the class 50-year gift. Before you read this, you will have received a statement as to how it stands at present, with a plea for more contributions. Many details of next June's commencement, Alumni Day, and class week end have to be decided, and we should have all the suggestions you can send in. In the absence of any help, you must be willing to take the decisions of the Secretaries in good part, and all we can ask is that you let us know, that you are going to attend any or all events from Friday's commencement exercises, June 12, to Alumni Day's Stein-on-the-Table Banquet, Monday evening, the 15th. Some criticism of the men living near at hand has been voiced by those living at a distance, in that they do not attend when they might. Those living at great distances expect to see those near Boston, and many come on purpose to see them. We are letting them down, when we do not show up.

There are about 60 members of the Class who live within 100 miles of the Institute, and probably 40 who are in the suburbs of the city. It would seem that practically all of these should be in attendance at least of a part of the events. There will never be another 50th reunion, and, for many of us, this will be our last, so let all those turn out who are at all able to.

A recent letter from H. S. Morse, I, says: "I seem to be having difficulty retiring from service with the Indianapolis Water Company. Since my retirement, December 31, 1949, I have been busy, and I mean busy, on certain civic activities, notably the Marion County Council (the finance control of the county government), and as president of the Board of Sanitary Commissioners of the City of Indianapolis. Since January 6, I have been president of the Indianapolis Water Company and still retain my job as president of the Board of Sanitary Commissioners. However, I will resign from this latter job just as soon as I conveniently can, that is, convenient to the job of that commission."

The Indianapolis *Star* further states, on its editorial page: "Back in Harness. We're glad the new owners of the Indianapolis Water Company have persuaded 'Scotty' Morse to come back to work as president of the company. He didn't seem to us to be anywhere near old enough or feeble

enough to retire when he did so three years ago. He quickly demonstrated that he wasn't when he took on a series of public service assignments and did outstanding jobs as president of the Marion County Council and as head of the City Board of Sanitary Commissioners. His return to direction of the company he had served for 25 years may curtail his public service work a little, though we hope not much. His selection as the top operating executive of this virtually important Indianapolis utility further makes it clear that the new owners intend to follow the policy they said they would follow when they bought its stock. Most of the capital investment comes from Texas. But with Mr. Morse as president and Homer K. York of Indianapolis and Marion as the most active of those investors, the city is assured of local control of actual operations, with the interests of Indianapolis customers its first concern." A mighty fine tribute, and well deserved. Our best wishes for a prosperous New Year to Morse and the Indianapolis Water Company.

A last word, don't forget the 50th reunion next June, and be sure to drop us a line telling us you are coming "back to Tech." — FRED A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, Box 103, South Wellfleet, Mass.

## • 1904 •

A letter has just arrived from the manager of the Oyster Harbors Club at Osterville on Cape Cod, stating that he is reserving rooms for our 50th reunion in June, 1954. The reservations begin Friday, June 11, for dinner and run to Monday, June 14, for breakfast. Part-time reservations can be arranged but we are hoping that a large percentage of the Class will plan to stay the whole period. At present prices, the cost, American Plan, is \$14 per day, two in a room, or \$18 per day, one in a room. Final prices cannot be fixed until a later date but they should remain approximately the same.

We have told Mr. Church, the club manager, that we should have at least 75 present, including wives, and that we hoped to approach 100. We are getting off to an early start so let's shoot for the upper mark. In all seriousness, we urge that you begin planning to attend this reunion. It comes only once in a lifetime and will be pleasant to look forward to.

As stated in our January notes, our classmate Mrs. Katherine Dexter McCormick will have charge of the women's program. Our well-known railroad authority Gus Munster will apply his Boston and Maine experience to the transportation problem and Cy Ferris will soon be reaching into your pockets for contributions to the traditional 50-year class gift to the Institute. Other plans and announcements will be made from time to time, so watch for them in this space.

General news is scarce but we are indebted to Stan Skowronski for an item on Bob Sosman, taken from the New Brunswick, N.J., *Times*. Bob has been a rival of Herb Kalmus lately in newspaper publicity. The present announcement tells of the presentation of the Albert Victor



Bleining Award to Dr. Sosman. This is the nation's highest honor in ceramics and just about fixes Bob's position in this field. As previously announced in these notes, he was recently made an honorary member of the American Ceramic Society, one of four American honorary members. The *Times* clipping gives the highlights in Bob's career, including 20 years with the Carnegie Institution in Washington and 19 years in the research laboratory of the U.S. Steel Corporation. He is now on the staff of Rutgers University where he must be deceiving them as to his age, which is supposed to be 71.

We have received belated news of the death of William W. Cronin at Syracuse, N.Y., on March 26, 1952. No details are available. — *Acting Secretaries:* EUGENE H. RUSSELL, JR., 82 Devonshire Street, Boston 9, Mass. CARLE R. HAYWARD, Room 35-304, M.I.T., Cambridge 39, Mass. AMASA M. HOLCOMBE, *Assistant Secretary*, University Club, 1135-16th Street, N.W., Washington 6, D.C.

## • 1905 •

At the time for writing notes for the February issue of *The Review*, there was an absolute vacuum of news. However, Christmas cards began to arrive with personal notes added to the expressions of seasonal good wishes, and I hoped (without success) to get the belated news into the February issue.

Bill Spalding sent a beautiful card from Holland where he and Mrs. Spalding are staying, probably until March. The Cyanamid Company, with whom Bill has been associated for many years, has been furnishing a Dutch chemical company with design information for a petroleum cracking catalyst plant, similar to the one Bill has been running at Fort Worth, Texas, and Michigan City, and Bill is doing the informing and will start the plant in operation. The name of the company would take several lines, but Bill suggests that if you write to him (at once), make it "Ketjen Company, Postbox 15, Amsterdam, Holland." Bill and his wife had Thanksgiving dinner on the S.S. *Nieuw Amsterdam* on the way over.

Let me quote further: "Dutch cooking is superb (what there is of it), but the breakfasts and lunches, by our standards, are peculiar and skimpy. Cheese and bread for breakfast is O.K., but I haven't learned to enjoy a lunch of bread and uncooked bacon, and/or smoked horse-meat, salted (uncooked) herring, and so on. Our dinners at the Hotel Victoria are wonderful and our Dutch friends sometimes invite us out for home-cooked meals, Indonesian dishes, and so on, with 'Bols.' We are getting just nowhere with the Dutch language. I had hoped to ease up on it with the help of the residue of the German that Blackie taught us, but it's no use. I attend Rotary lunches here on Tuesdays, and listen for an hour to something that sounds like static from a broken radio. Regards to all '05 men."

The next card was from Alden Merrill, from whom we have not heard directly for a long time. His report is worth quoting in full: "I was glad to get your letter of December 11 and am making an un-

precedented early reply in connection with Christmas card addressing. I am not yet ready to be added to your necrology list but am in reasonable health, considering my advanced years. I have not even retired, but still work (?) for the Buffalo branch of the American Brass Company (an Anaconda subsidiary) as technical supervisor of the Buffalo branch. All that the change of address meant was that my wife and I had built a new house, just about what we wanted, with a little more land for flowers, and out nearer where our children had settled.

"Unfortunately, shortly before it was completed, my wife had a heart attack and passed away suddenly. I had the house finished and have lived in it since, as it is convenient, comfortable, pretty, and a nice place with nice neighbors. I fuss with roses a bit in the summer, but haven't played any golf for several years nor any tennis for a still longer period. My athletic and youthful friend Hub and I did climb a fair-sized mountain not too many years ago when my wife and I spent a part of our vacation with him and Elsie Kenway at a camp up in the Rangeley region. I have a son who is married, a lawyer, and who lives about a mile away and has two boys. I have a daughter whose husband is in the building business, who also lives not much over a mile away and has two girls and two boys. So you see, I have six grandchildren to observe.

"My son was a lieutenant (senior grade) in the Navy during the recent war, and my son-in-law, originally a lawyer, was in the F.B.I. through the war. The Buffalo branch of the American Brass Company was just one of the other American Brass Company branches which, through the recent, past, present, and probable future wars, has produced and will produce millions and millions of pounds of brass and other items for munitions, and try to furnish what the doctor ordered, with fair success."

Claude Anderson (thanks again, Andy) tells of a recent call, while in Baltimore, on G. W. C. Whiting, whom I tried to find there a couple of years ago without success. Whiting was originally in partnership with LeBaron Turner. Has not seen an M.I.T. man for years (local alumni association, please note), has been back to Boston only once since graduation, is president of a large construction firm. I finally obtained R. C. Cutting's (II) address through his previous business connection, U.S. Army Engineers, New Orleans, La. They report: "I regret to say that Mr. Cutting has been quite ill of late. Due to a diabetic condition, it has been necessary to amputate both of his feet, and his general condition is not good. I know he will be very happy to hear from you, and I'm sure a letter from you will cheer him up considerably." Let's take this advice and write Bob, whose address is 118 Sycamore Drive, Metairie, New Orleans, La.

Erwin Bender, XIII, writes merely to confirm a previous intimation that he had retired last August after 40 years as manager of the New York office of the Kinney Pump Company. He is still trying to orient himself to his life of leisure, but advises

all classmates to stay on their jobs as long as their health and employers permit. Bender's present address is 29 Minton Avenue, Chatham, N.J. Ralph D. Emerson, IV, long ago retired from his profession (architecture), is now managing the estate of Edmund D. Codman, with offices at 1109 Barristers Hall, Boston. Ralph regrets exceedingly that his handicap (complete loss of hearing) prevents attendance at class functions but wishes to be remembered to all.

Ed Barrier has been spending a couple of months (until March 7) at Ghost Ranch Lodge, Tucson, Ariz., then will make a short trip to Los Angeles before his return to Cape Cod. A recent issue of the *Pittsburgh, Pa., Press* shows a picture of Frank Chesterman and describes his coming talk (as chairman of the Pennsylvania Little Hoover Commission) before the Allegheny League of Women Voters. — FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin Street, Boston, Mass.

## • 1906 •

Mr. and Mrs. Secretary enjoyed the annual experience of receiving Christmas cards from classmates. The cards seemed unusually attractive this year, and some of them contained personal notes which are always welcome, particularly if they can be used in this column. The Batchelders' card from St. Petersburg was one of the first to arrive. They spent some time there last winter and are apparently repeating the experience this year. The Coeys' card advised that their married daughter, who lived in Wellesley, had moved to Southbury, Conn. From the Secretary's point of view this is not so good, as Stewart and Betty used to visit Wellesley several times a year and almost always called up when they were there. We shall miss those calls.

George Hobson wrote: "This has been a mixed-up year for me. Made happy by the arrival of a grandson, John Hollister Hobson. Made unhappy by my gall bladder. Finally they took it out. Feeling much better thank you. But if the doctors keep taking me apart, I wonder if there will be enough left to make our 50th reunion." George is living the life of a retired army officer in South Portland, Maine. Abe Sherman's card included a winter scene of a new home in Rochester, N.Y. An address has been received indicating that the Shermans have followed their practice of many years by wintering in Sarasota, Fla. Cards are also acknowledged from the Blackwells, Sherman Chases, Coes, Darlings, Farwells, Mrs. Ginsburg, the Hoefers, Kerrs, Nortons, and Mrs. Philbrick. Thanks to one and all for thinking of us at the Christmas season.

A letter, dated December 19, was received from Terrill Bartlett. This included the season's greetings and advised that Mrs. Bartlett had been ill but had recovered in time to enjoy the usual Christmas festivities. Extracts from Terrill's letter are as follows: "We didn't go away this summer as we are very comfortable in our home which is insulated and well ventilated, and I am quite busy on a report. Our dry climate with little humidity and enough altitude for cool nights, nearly always with a good breeze, makes the

summers entirely bearable, even if the day temperatures sound rather high." Terrill concluded his letter by citing his interest in the local Boysville which is moving to a new home in the country. He has been on the Boysville Board for four years as a representative of Kiwanis, which is one of the cosponsors for the club. He also mentioned the coming Technology pilgrimage to Mexico City and expressed the hope that some of the Tech group would stop to see San Antonio.

The Secretary has received an illustrated clipping from the New York *Daily News* of November 23, 1952, entitled "Are You Headed the Right Way?" The article is about the human engineering laboratory of Johnson O'Connor which is located at 11 East 62nd Street in Manhattan. Besides the New York office, the O'Connor Foundation now has offices in Boston, Philadelphia, Chicago, Fort Worth, Los Angeles, and Toronto. This article is of interest to '06 people as O'Connor is the husband of Eleanor Manning of our Class. A paragraph in the article advises that O'Connor's home is really in Boston where his wife, Eleanor Manning, is a well-known architect. The O'Connors travel a good deal in their separate lines of work but usually manage to get together on week ends. Miss Manning, the Secretary recalls, attended our 20th reunion at Old Lyme, Conn. Her marriage to Mr. O'Connor was subsequent to 1926. Although she has not been to a reunion since the Old Lyme affair, every effort will be made to get her to attend the 50th.

Classmates will be sorry to learn that Frank Benham's wife is suffering from the effects of an abdominal operation which she had the latter part of November. We are indebted to Frank for the following item in regard to Herbert Ball which was taken from an edition of the Boston *Globe* published about the middle of January: "Professor Herbert J. Ball, head of the Department of Engineering of Lowell Textile Institute, Lowell, is to receive the Harold DeWitt Smith Memorial Medal. Committee D-13 on textile materials, of the American Society for Testing Materials, will make the Award at its March 19 meeting in New York City. The medal, a testimonial to the memory of the late Dr. Harold DeWitt Smith, was established in 1949 by Fabric Research Laboratories, Inc., Boston. It is awarded for outstanding achievement in the field of textile fiber science and utilization." Dr. James H. Means has contributed another article to the *Atlantic Monthly*. This was included in the December, 1952, issue under the title, "The Best Medicine for the Patient." The paragraph introducing the article will be of interest to classmates and is, therefore, included here: "Are the American people getting adequate medical care at a price they can afford? Speaking from the experience of twenty-seven years as a Professor of Clinical Medicine at Harvard University and Chief of the Medical Services at the Massachusetts General Hospital, Dr. James Howard Means evaluates the efforts of both doctors and laymen to meet the nation's health needs. *Atlantic* readers will recall his articles, 'England's Public Medicine' (March, 1950)

and 'The Doctor's Lobby' (October, 1950). The role of government in the organization of medical services will be the subject of the next article by Dr. Means, in an early issue."

The Secretary had occasion to contact Class Vice-president Sherman Chase about January 15 and found him on a business trip to Miami, Fla., in connection with a sewerage disposal project for that city.

Notice has been received of the death of Arthur C. Kirby, who passed away on February 12, 1952, at Rochester, Mass. The Secretary's card indicates that he was formerly of New Bedford but had lived in Rochester since 1939. No additional information is available. — JAMES W. KIDDER, *Secretary*, 215 Crosby Street, Arlington 74, Mass. EDWARD B. ROWE, *Assistant Secretary*, 11 Cushing Road, Wellesley Hills 82, Mass.

## • 1907 •

*Time* magazine for January 12, 1953, page 37, showed another excellent likeness of our internationally-known classmate, Clarence Howe, and contained a news item from which I quote: "A Royal Canadian Air Force C-5 transport lifted off Ottawa's snowy Rockcliffe Airport one morning this week, and headed south for Rio de Janeiro. Aboard the plane was C. D. Howe, Canada's go-getting Minister of Trade & Commerce, leading a group of government and business leaders on a five-week good-will tour of Latin America. The mission is the first of its kind Canada has sent to Latin America since 1946. Its announced purpose: 'To present a picture of Canada's industrial growth and commercial aspirations so that business and government in Brazil, Argentina, Uruguay, Venezuela, Colombia, the Dominican Republic, Haiti, Cuba, and Mexico will have their attention focused on Canada.'"

"The picture of Canada's economy that Howe can paint for his Latino hosts is one of continuing boom in 1952 and even better prospects for 1953. With a population of only 14,500,000, Canada in 1952 pushed its gross national product to an estimated \$22,750,000,000, a per capita output second only to the U.S. More than \$5 billion was poured into new industry and capital investment, 90% of it by Canadians themselves. Employment and personal incomes rose to record highs, while prices leveled off and the cost of living dropped for the first time since 1949. And in 1952 the Canadian dollar, symbol of the national economy, rose above the U.S. dollar (current rate: \$1.03 U.S.) to become the world's hardest currency. Canada's proudest achievement is the fact that its recent development has been carried out on a strict pay-as-you-go basis, a business method that has gone out of fashion in most other parts of the world. During 1952, Canada floated no foreign loans, relied entirely on outside risk capital (mostly from the U.S.) and on the savings of its own people to finance all its new ventures.

"As it has for the past six years, the national budget is heading for a surplus; the treasury was \$292 million to the good as the old year ran out. It was no surprise that Canada's Finance Minister Douglas Abbott, returning from the recent Com-

monwealth Economic Conference, could report that other delegates had peppered him constantly with questions about Canada's progress. 'At no time in our history,' said Abbott, 'have we been the object of such interest and respect in the eyes of other nations of the free world.' " It seems fair to say that a large part of the credit for the situation in Canada, as shown above, is due to our classmate.

Not until January of this year did I learn of the death on December 6, 1951, of Cornelius S. Fleming, who graduated with our Class in the Course in Chemical Engineering. I have heard nothing from him directly since 1940, but, as far as I know, since 1935 he was in business for himself in Los Angeles as a consulting chemist. Previous to that time he was associated as a chemist with Procter and Gamble in Cincinnati, J. B. Sipe and Company, manufacturers of paints and varnishes in Pittsburgh, and with Paraffine Corporation in San Francisco as superintendent of their paint department. I have no up-to-date information relative to any members of his family who may have survived him. At the time of his death, his address was 5127 West Boulevard, Los Angeles 43, California. — John F. Greene, who, at the time last fall when I sent to you the list of names and occupations of active members of our Class, was located at Hammond, La., has returned to the headquarters office at 39 Broadway, New York City, of the engineering firm, Ford, Bacon and Davis, Inc. His home address is 188 Bellevue Avenue, Montclair, N.J. — BRYANT NICHOLS, *Secretary*, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary*, 18 Summit Street, Whitinsville, Mass.

## • 1908 •

Our 45th reunion will be held at Snow Inn, Harwich Port, Mass., on June 12, 13, and 14.

Inasmuch as it has been some time since 1908 news appeared in *The Review*, it seems best to go back a bit to bring you up to date.

The usual bimonthly dinner meetings of the 1951-1952 season were not held because of seeming lack of interest and difficulty in finding a suitable place for the meetings; however, the Class was represented at the midwinter alumni meeting on January 31, 1952, by Bill Medlicott, Paul Norton, George Belcher, Jim Burch, Karl Kennison, and Myron Davis. Jim Burch, who was in town from Dubuque visiting his daughter at Radcliffe, happened to telephone me to say hello, so I was able to tell him of the meeting. A farewell dinner was held June 3, 1952, at the Brae Burn Country Club, West Newton, Mass., in honor of Karl Kennison who had recently become chief engineer of the New York City Board of Water Supply.

The following classmates and guests were at the luncheon on Alumni Day, June 9, 1952: Doc and Mrs. Leslie, Miles Sampson, Henry Sewell, Arthur Gardner, Linc and Dorothea Mayo and their niece, Sally Rathbone, Steve Lyon, and Harold Osborne. At the Statler banquet, the Class needed two tables, as the following men



attended: Bill McAuliffe, Harold Osborne, Myron Davis, George Freethy, Joe Wattles, Henry Sewell, Sam Hatch, Nick Carter, Linc Mayo, Leslie Ellis, Gardiner Perry '09, George Belcher, A. S. Cohen, and Harold Gurney.

As a fitting climax to the class activities for the 1951-1952 season, Doc and Mrs. Leslie had the nice idea of a get-together, with our wives, and invited us to their home at Beverly, Mass., for a buffet party on June 14, 1952. The weather, which seems to be usual for our parties, was perfect; and the following couples came: Arthur Appleton, Jeff Beede, George Belcher, Jim Burch and his daughter, Mrs. Thorne, Nick Carter, Leslie Ellis, George Freethy, Harold Gurney, Sam Hatch, Winch Heath, Harry Lord, Linc Mayo, Henry Sewell, and Joe Wattles. We were greeted by Doc and Mrs. Leslie and their son, Malcolm, and his wife.

Cocktails and tasty hors d'oeuvres were served in the beautiful gardens while the guests were arriving. Joe Wattles was one of the last to come, as he had been a pretty busy boy that day. As president of the Canton Historical Society, he had attended a lunch and presented to Old Sturbridge Village the John Fenno House, which had been moved up to Sturbridge from Canton, Mass. With all present, and at the suggestion of our hostess, we adjourned to the house and did full justice to a most scrumptious buffet supper. To my way of thinking there is nothing better than lobster, as we get it along our North Shore.

After eating more than was probably good for our waistlines, we found comfortable seats on the sun porch, where Joe Wattles showed Kodachromes taken during a tour of Europe the summer of 1951. Especially fine were those of Iceland, the North Cape, Switzerland, Holland, and so on. Mrs. Wattles was a most able and instructive narrator, which added greatly to the enjoyment of the pictures. Many thanks to Doc and his good wife for a most enjoyable time which will be long remembered.

Your Secretary retired from active business on June 1, 1951, after some 43 years in Factory Mutual Fire Insurance, which probably accounts, in part, for the absence of class notes in *The Review* up to now. After digging up notes, and I do mean digging, for some 30 years, it seemed I was due for a sabbatical leave. They tell us "there is no rest for the weary," so here we are back on the job again. If you fellows would come across with some news once in a while, it would certainly help a great deal.

Harold Osborne retired as chief engineer of American Telephone and Telegraph Company on August 1, 1952, after 42 years with the Bell System. He was elected president of the International Electrotechnical Commission at a meeting held last fall in Scheveningen, Holland. He is also the president of the U.S. National Committee of the American Standards Association, so he apparently will still keep busy.

George Belcher, our Class Agent, retired November 1, 1952, after many years with the Research Department of the

United Shoe Machinery Corporation. He and Edith sold their big house in Waban, Mass., and have settled in Harwich, Mass., on Cape Cod. Jim McGowan, who was elected a life member of the M.I.T. Corporation last year, was expecting to retire as president of Campbell Soup in February, 1953, so I hope we will see more of him at future reunions.

The opening of the M.I.T. Faculty Club at 50 Memorial Drive, Cambridge, last spring solved our problem of finding a suitable place for our bimonthly dinners, so our first dinner of the 1952-1953 season was held there November 20, 1952. The following were present: W. B. Hunter, Bill McAuliffe, Sam Hatch, Winch Heath, Joe Wattles, Nick Carter, Linc Mayo, Steve Lyon, Myron Davis, Henry Sewell, and Leslie Ellis. After a most satisfactory dinner, plans for our 45th reunion next June were discussed. Steve Lyon, the class expert on stamps and coins, gave a very stimulating and interesting talk concerning his hobby.

We have only recently learned of the death of James A. Kane and Joe Sando during 1950. We are also sorry to report deaths of Horace Calder, Lawrence A. Clark, James Denney, and George E. Tolman during 1951.

Make your plans now to be with us on our 45th reunion next June 12 to 14, at Snow Inn, Harwich Port, Mass., on Cape Cod. — H. LESTON CARTER, *Secretary*, 14 Roslyn Road, Waban, Mass.

## • 1909 •

We were all both surprised and shocked to learn that our beloved president and classmate, Carl Gram, X, died suddenly of a heart attack at his home in Dayton, Ohio, on December 30. Our surprise is enhanced by the fact that we all remember Carl as an athlete with a rugged and robust physique which enabled him to carry on the many difficult assignments which have been his throughout the years. Only a year ago your Secretary had lunch with him in New York and found him working vigorously on the design and construction of air bases for the defense effort. At the time, one could hardly help noting how little change there had been since his student days, both in appearance and the energy and drive with which he conducted his work.

Only this past Christmas we received a cheerful note from him telling how busy he was, and he added, "but it is a satisfaction to save money for the taxpayers." On learning of his death, the Secretary extended the sympathy of the Class to his widow, Hazel, and the family, as well as to his sister, Mrs. Harry M. Watts, of Wellesley. There is much to tell about Carl and his accomplishments but because of the time element this will be postponed until the April Review, in which an adequate memorial will appear. In the meantime, we have asked Jim Critchett to take over the duties of the class presidency and it is further planned to hold a letter ballot by which new class officers will be elected.

Another well-known classmate, Colonel Armin F. Herold, III, died over a year ago of a heart attack on January 5, 1952, and the notice has just reached us. Armin

prepared for the Institute at Smith Academy at St. Louis. We all remember his several activities as a student. He was a member of the Tug-of-War team, treasurer of the Missouri Club, and for three years costarred in the Tech shows, along with the inimitable Charlie Belden, as one of the "lady" principals. We also remember him as one of the officers of the Tech Battalion. Armin told us much of his career in a letter appearing in the class notes in the May, 1945, Review.

After graduation from the Institute, he went to work for the New York Central out of St. Louis and finally achieved one ambition, namely to run an engine. He moved to California and when World War I broke out he entered the service as a first lieutenant and was detailed to the aviation section of the Signal Corps. He attended an aerial school in Oklahoma, then went to France where he saw much combat service, was once shot down and hospitalized, and was awarded the French Croix de Guerre and the Purple Heart. After the war he remained in the Army, serving in various capacities, mostly aviation.

He made aviation history when, in 1925, he piloted an old DeHavilland 4-B plane from Salt Lake City to San Francisco and back again. He had just been given command of McChord Field, near Tacoma, Wash., a week before Pearl Harbor. He remained in command until he was retired in 1944, because of a coronary ailment. He then took a position with the Seattle Chamber of Commerce and later moved to San Mateo, Calif., to enjoy his well-deserved retirement. The Class can well be proud of a member who has done so much and has won such high distinction in the service of his country. He is survived by his wife Dorothy; two sons, Captain Armin F., Jr., of Riverside, and Roland of San Jose; and two daughters, Mrs. Barbara Ann Holstein and Joyce Herold. On behalf of the Class, we have conveyed to Mrs. Herold our expression of sympathy. She has been greatly affected by the loss of her husband — "he was such a grand person."

A notice of the death of Joe D. Creveling, II, has been received from the Alumni Office with no date given. The only further information was his address, care of T. D. Hart, 33 North LaSalle Street, Chicago, Ill. Our records show that in the 1920's he was associated with the Henry L. Doherty Company and joined Panhandle Eastern Pipe Line Company in 1937. In 1945 he went to Chicago where he apparently was employed until his death.

Art Shaw, I, who was not only a fraternity brother of Carl's, but also a close friend of Carl and his family, has recently retired from the firm of Metcalf and Eddy of which he has been a partner for so many years. He writes as follows: "As of December 31, 1952, I retired from partnership in Metcalf and Eddy, but shall continue on a consulting basis in connection with matters where my familiarity and previous contacts make it advantageous. I have taken this step to obtain relief from the tensions of business and for the enjoyment of a measure of leisure while I

can still enjoy it. At the moment, I have no particular plans but have no misgivings as to keeping happily occupied. Betty and I will find ways to keep out of mischief and we depend upon our six grandchildren to keep our outlook youthful. Half live in West Hartford, Conn., and half in Newton Center, and all appear to like us well enough to enjoy the occasional visits which their nearness permits and which have the effect of inoculation with the contagious spirit of youth. I must confess, however, that the reaction sometimes leaves us a bit weary!"

We have word from Ken May, VI, that the investment firm, Whiting, Weeks and Stubbs, with which he has been associated for the past seven years, has merged with F. S. Moseley and Company, and the combined organization will be known by that name. John O. Stubbs has been named the managing partner. Ken will continue his investment work with the new firm, which will be located at 50 Congress Street, Boston, and any of us will be most welcome whenever it is convenient to visit him.

The Treasurer's Office has reported that Lewis Johnson, VI, has sent to the Institute a life insurance policy to the amount of \$1,000 as a gift to the Class of 1909 fund. The Class, as well as the Institute, appreciates Lewis' generosity. At the same time we learned that the Johnsons have been married 43 years, a most excellent record. Almost simultaneously we received the following from Ralph T. Jope '28, Director of the Development Office, which reiterates Paul Wiswall's affection for the Institute: "We are indeed sorry that Paul Wiswall has passed from us. Both the Class and M.I.T. have lost a very loyal Alumnus and a hard worker. Paul always held M.I.T. close to his heart. Recently, M.I.T. has been advised that after taking care of outright bequests to a few friends and relatives, M.I.T. is to receive the residuary of his estate.

"I quote below from a copy of Paul's will, which M.I.T. has recently received. 'To the Massachusetts Institute of Technology in Cambridge, Massachusetts, the remainder of my residuary estate for the general purposes of that institution.'" This is one further tribute to the deep affection which Paul always held for the Institute. — CHESTER L. DAWES, *Review Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. *Assistant Secretaries*: MAURICE R. SCHARFF, 366 Madison Avenue, New York 17, N.Y.; GEORGE E. WALLIS, 185 Main Street, Wenham, Mass.

## • 1910 •

It is with deep sorrow that I have to announce the death of John Lodge on January 2, 1953. Carroll Benton writes of John as follows: "I am enclosing a clipping from last Saturday's *Herald-Tribune* that speaks for itself. John was one of the most regular attendants at our monthly luncheon meetings, seldom missing a meeting except when he was ill. We shall miss him very much. John came to M.I.T. from Harvard. I think it was at the beginning of our junior year, and since he took the same course as I (Course I), I saw quite a lot of him during my last two

years at Technology. I understand that he had a serious abdominal operation some five years ago and since then has had a number of operations on his face. About six weeks ago he went in to the Mountain-side Hospital in Montclair for an operation to clear up some adhesions resulting from the old operation. I guess they found more than adhesions, and, at first, after the operation he didn't seem to gain. Then, after awhile, he began to pick up; and when I talked with Mrs. Lodge about two weeks ago he was up and walking around the hospital. Then a week before he died, he suffered a relapse from which he never recovered."

Frank Hodges writes as follows: "I retired in '49 but was called back as a consultant in '50. Then, because of my wife's health, I retired a couple of times more, making it final in July, 1952. Since then I have been so busy at home that it would seem like a vacation to go back to work. Sometime I may write you regarding some of the work I did and places I visited since leaving M.I.T. if you think anyone would be interested. Curiously enough, I have worked in six different countries outside the U.S., spending a total of nine years, and never once met an M.I.T. '10 man."

I have also had short notes from the following members of the Class: Fred Dewey, Alfred Hague, George Humphrey, Fred Crossley, and Jim Tripp, who has been to Turkey six times since 1950. Cliff Waldo is leaving New England to go into business in Chicago. — HERBERT S. CLEVERDON, *Secretary*, 120 Tremont Street, Boston, Mass.

## • 1911 •

At this mid-January writing, the first returns of the 1952-1953 Alumni Fund are in, and it's a pretty happy Class Agent that is reporting you men of 1911 are off to a great start in this current campaign, for through December 31, 1952, we had \$2,156 pledged from 85 '11 men, or an average pledge of \$25.36 — as compared with last year's final fund figure of 97 of us pledging \$2,208 for a \$22.80 average contribution. This year the total will surely be boosted during the winter and spring, and June will find 1911 right out among the leaders — her usual spot!

Christmas Day, 1952, turned into a day of sorrow for the Meisel family in Milton, Mass., for our loyal classmate — Otto C. Meisel, II, President of the Meisel Press Manufacturing Company, Uphams Corner, Boston, died at the age of 64. He is survived by his wife, the former Helene Widenhorn, and a son, Robert C., a lieutenant serving with the Army engineers. Jack Herlihy represented the Class at the funeral four days later.

Earlier in December, Roger Loud, VI, had the misfortune to lose by death his brother, Ralph, an 1899 M.I.T. man, who had been with the Metropolitan District Commission's Sewerage Division for 40 years prior to his retirement in 1946.

President Don and his trusty lieutenants, Vice-president Howard Williams, Phil Caldwell, and Dick Gould, rounded up a fine crew of classmates for what has become the annual Dennie Luncheon at

the Technology Club of New York headquarters at the Architectural League, held on January 13. We had, curiously enough, 19 classmates at the luncheon. It was one of the most enjoyable get-togethers we have had there in Big Town.

In the talk-around, alphabetically, Royal Barton, VI, said he had now been 29 years with Ebasco Services (Electric Bond and Share), with still 15 months to go before retirement. G. Arthur Brown, X, still enjoys his teaching at Pratt Institute's School of Leather and Tanning Technology, while Phil Caldwell, I, continues as vice-president of Robertson Paper Box Company. Phil said that at the last minute, Zeke Williams found he had to take a noon plane that day for an appointment in Chicago, having previously planned to be present.

Jim Campbell, I, of Eadie, Freund and Campbell, consulting engineers, says they continue very busy with some special work for Columbia University and the Atomic Energy Commission currently occupying most of their time. Joe Gershberg, VI, although retired two years ago at the age of 65 by Brooklyn Consolidated Edison Company, has been quite busy as a mechanical engineer in the interests of Gibbs and Hill, Gotham consulting engineers. He has hopes of being transferred to the firm's California headquarters eventually, he added. Dick Gould, XI, has now been 23 years in the employ of the city of New York, specializing always in sewage disposal and also doing some consulting work. The Goulds have a daughter married and living in Honolulu, a married son on the West Coast, and this summer they went to England to see their younger son married.

Joe Harrington, VI, continues with En-Jay Company, a Standard Oil affiliate dealing with petroleum industry by-products, and he and Rose continue to live in New Rochelle. Cleon Johnson, X, still has his own business in Ridgewood, N.J., handling Spencer products, while Norm Lougee, VI, has his own consulting engineering firm at 120 Broadway, adding that he has "no retirement plans." Bob Morse, VI, has just completed 25 years with American Gas and Electric Company and is still going strong, while Larry Odell, XIV, in addition to exporting chemicals, is now importing rubber. He spoke about the continuing greater use of synthetic rubber.

Dick Ranger, VIII, said he had recently given up another of his reputed nine lives — when he retired completely from the Army — and now he is devoting most all his time to his magnetic tape development, which is coming more and more into popular use on television shows, such as "I Love Lucy" and similar serials. Pat Russell, normally Frank Russell, I, is still in real estate, but has changed location and is now with Clark T. Chambers, Inc., 347 Madison Avenue, New York; while Johnny Scoville, IV, continues with Sanderson and Porter, Gotham consulting engineers, week-ending at West Hartford, Conn. Nat Seeley, II, and Louise had a European trip this summer, but he devoted his time to his new "real love" — the trailer coach — as the ultimate for retired people, so



that they can conveniently and easily "follow the sun." If interested, contact Nat at 115 Van Rens, Stamford, Conn.

Don Stevens, II, looking and feeling much better, expressed his delight at having so many classmates present. He has been taking up oil painting as a hobby and enjoys it immensely. (Sara, who accompanied me this year, and I spent a night with Don and Lois in Ridgewood and Don's paintings are really coming along fine. O.B.D.) Walter Welch, VI, for 35 years with Combustion Engineering Superheater, Inc., plans to retire at the end of 1953. This winter he is planning to spend a month with his son in Hawaii. Like Larry Odell, who suggested we have 1911 luncheons in New York more frequently, Walter went a step farther and said we should have class get-togethers pretty close to every two years from here on in. At last we picked a date when Rufe Zimmerman, IX, Vice-president of U. S. Steel Corporation, didn't have a committee meeting or something to conflict, and we were as delighted to have him as he was to attend. He is now in his 39th year with Big Steel and hopes to retire within the current year, if all goes well. Harry Tisdale, X, and Harry Manley, I, both sent regrets.

When I spoke to the boys and asked for a show of hands on probable attendance at the informal 1911 get-together at Snow Inn, Harwich Port, Cape Cod, June 19, 20, 21, every one of the 19 present raised his hand — and most all meant their wives would go along too. So the success of the party seems already assured. Before these notes appear you will have received an announcement and application blank. Manager Frank Thompson has quoted us the same reasonable \$13 a day, plus tax and tip, per person, despite rising costs and regular season upped rates.

A telegram from Bob Haslam, X, expressed regret that an unexpected development prevented his attendance. A heavy cold kept Harry Lake, I, at home, and Ralph Walker, IV, was on jury duty and thus unable to attend. President Don read a letter from Lester Cushman, IV, who resigned from Burns and Roe, Inc., engineering consultants, New York City, and moved to Woodbury, Conn., to be under the watchful eye of his son, Dr. George L. Cushman, a general practitioner there. Cush said that he and Hazel were living there now, his son having insisted on his "getting away from the Manhattan 'rat race' with its long commuting time and office pressure." After two weeks in the Waterbury Hospital getting straightened out, Cush became associated with Richard Shipman Leigh, who has a consulting practice there in the village of Woodbury — "a beautiful spot with a single wide main street with fine Colonial houses and old trees on both sides." His new address is Box 178, North Woodbury, Conn.

Just before the talk-around, President Don conducted a couple of contests, and Dick Gould, who now has 11 (maybe 12) gray hairs gave up his "youngest looking" title to Dick Ranger, while Jim Campbell was voted the youngest looking gray-haired codger, and Larry Odell walked off with the grandchildren contest, having

10 of them. And, oh yes, Zim told us why there are so many bald-headed men in the world.

Paul Cushman, VI, wrote in December from Oklahoma City: "We have been in the new factory (L. and S. Bearing Company) about eight months. It is 500 by 130 feet with a piece cut off at the front left and as much added beyond the left rear. I put in all the hours I can spare at the factory as chief engineer, metallurgist, designer, trouble shooter, and so on, and we are expanding here rapidly. I continue on at Oklahoma University on a full-time schedule and Otilie and I plan to get in June for the informal get-together." Shortly after the first of the year Otilie sent me two thoughtful clippings: one from the *Alcoa Aluminum News-Letter*, Christmas issue, showing a picture of Irving Wilson, XIV, Alcoa President, dedicating the newest of the company's many smelters — this one at Wenatchee, Wash., in September. The other was from the *ASME News* for December, telling of the advancement of Fred Daniels, VI, to the grade of fellow in the American Society of Mechanical Engineers. Congratulations, Fred, for the well-deserved honor and the following fine citation:

"Fred H. Daniels is chairman of the board and vice-president, Riley Stoker Corporation, Worcester, Mass., as well as president and director of Badenhausem Corporation, Cornwall Heights, Pa., and secretary and director of A. W. Cash Company, Decatur, Illinois, subsidiary companies of Riley. Mr. Daniels has held responsible positions with Riley since 1913, conceiving and developing many novel ideas which became important products of the corporation. Since 1926 he has been responsible for the management and direct supervision of all engineering matters including research, design, application, and installation of all type of equipment. He has been actively in charge of the negotiations for the purchase of the Riley subsidiary companies and has had the responsibility for determining that the products made by these companies would be complementary to those already made by Riley, enabling a better coverage of the field as to size, type, and increased ability to burn successfully fuels that were difficult to handle on equipment already made.

"Mr. Daniels holds many positions of public trust, serving at present as a member of the Industry Advisory Committee of both the National Production Authority and the Office of Price Stabilization. He is a past-president of the American Boiler Manufacturers Association and holds fourteen U.S. patents. In 1941, Worcester Polytechnic Institute conferred on Mr. Daniels an honorary D.E. degree."

Syd Alling, VI, retired last December 1 from the general sales managership for the Rochester, N.Y., Gas and Electric Corporation, and the company's official release read: "Mr. Alling was a graduate of East High and of the University of Rochester in 1909. He then went to M.I.T. and finished there in 1911 with an E.E. degree. He immediately joined RG&E as a cadet engineer and during his 41 years with the company he has held many positions of responsibility. For some years he

was Superintendent of Electric Distribution Construction and was also in charge of power sales. In 1946 he became Superintendent of Commercial and Industrial Sales and in June, 1950, was appointed General Sales Manager.

"Mr. Alling is at present chairman of the steering committee of the superintendent and production managers group of the Industrial Management Council. He is a member of the Chamber of Commerce, Rochester Club, Monroe Golf Club, Rochester Engineering Society, AIEE, Technology Club of Rochester, National Sales Executives Club, American Gas Association and the National District Heating Association. He and Mrs. Alling live at 281 Berkeley Street and are regular attendants at St. Paul's Church." A number of Syd's friends, including Frank Taylor, VI, honored him at a dinner which was held at the Sheraton Hotel in early December.

From the George Kenney family Christmas card, we learned that they have six grandchildren now — their son Bill and his wife have four, and their daughter, Julia, and her husband two. Bill is stationed in Panama for three years and George and his wife spent Christmas in Dayton, Ohio, with Julia and her family. Unfortunately, our general had to be in Hartford on an Arthritis Foundation meeting January 13, so missed our metropolitan lunch. While in the Connecticut capital city, George said he believed war with Russia is inevitable, adding: "I don't say that clash will come tomorrow, but I wouldn't want to make a prediction of too many years hence." Just had a postal from Harold Robinson, I, advising that General George is to be the Worcester, Mass., Rotary Club speaker on January 22, so I'll try to catch him there.

Our long-distance Christmas card this year came from Frank Osborn, III, in Portrerillos, Chile, and we also had a fine card and enthusiastic message from "The Junior Harmons" — Lieutenant Russell Harmon, Jr., USA, his wife Nan (Van Tassel), and the youngsters, Trip and Bruce, still located at Shreveport, La. Nan wrote that her mother, Ted's widow, is planning to join her in February for a few months. Roger Loud, VI, and Esther had a very attractive card, featuring their Weymouth home, as did Gordon Glazier, VII, and Gertrude, featuring their Lincoln house.

Ed Kruckemeyer, IV, architectural partner of Charlie Strong, IV, as Kruckemeyer and Strong, architects, Cincinnati, Ohio, is on a trip to Panama with his wife and son. Following a stay there, they plan to go on down the west coast of South America to Santiago, over to Buenos Aires, and up the east coast to Caracas, San Juan, and back to Rhineland. He is still very interested in the Jacob and Jenny Lichter Foundation for needy college students, located at 2109 Luray Avenue in Cincinnati. Johnny Bigelow, IV, city engineer at Marlboro, Mass., has been named a member of the mayor's new planning board for a term of four years. Al Wilson, I, has been appointed chairman of the executive committee of the trustees of Gordon College, Boston, and he is also currently president of the Cambridge Chamber of Commerce.

Here are four new addresses for classmates: Lester D. Cushman, IV, Box 178, North Woodbury, Conn.; George B. Forrestall, II, 78 Wellesley Avenue, Wellesley 81, Mass.; Harold G. Jenks, VI, Box 81, New Ipswich, N.H.; and Arthur C. Pillsbury, I, 2621 Deep Canyon Drive, Beverly Hills, Calif. And so to bed — with these two reminders: Don't forget to subscribe to the current Alumni Fund and to attend our family informal vacation week-end at Snow Inn, Harwich Port, Cape Cod, Friday, Saturday, and Sunday, June 19, 20, 21. See you there, I hope. — ORVILLE B. DENISON, *Secretary*, Chamber of Commerce, Gardner, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford 55, Mass.

## • 1912 •

C. Bolmer Vaughan, II, sends interesting news: "Gladys and I have decided now is the time, if ever, to 'have fun,' so are sailing February 24 for Sicily; thence Naples, Rome, Florence, Venice, Italian Lakes, Riviera, and out through Paris middle of July. Can't wait to get back there; long time no see: 16 years." You have the right idea, Bolmer.

One of the members of the Class sent in the following note: "The group photograph made on June 7, 1952, at the 40th reunion at Harwich Port is unusually good. The 91 persons shown in this 8 by 26 inch picture have almost all been identified through the joint efforts of Shepard, Wilson, Cook, White, and others. Prints will still be furnished by Metropolitan Photo Service, 739 Boylston Street, Boston, Mass., at \$1.50 each, postpaid. If you want a record of what 40 years has done to the boys you once knew so well, send your check, name, and address directly to Metropolitan for a copy. You will like it. Lester White offers to furnish, gratis, to all members of the Class that request it, a key to the picture with names of 87 of the 91 persons, provided the request is accompanied by a newsletter suitable for use in the class notes. This is an easy way to obtain the key.

"In addition to the professional photograph, Lester White made a photographic record of the doings at Harwich Port and the alumni dinner in Boston. His prints are 3 by 4½ inches and are a faithful, interesting record. All or any part of these may be obtained at cost by sending for a copy of the numbered list of pictures with names and then ordering the prints desired, by number, at seven cents each, postpaid. Here is the opportunity to get a lot of pleasure and satisfaction at low cost." — FREDERICK J. SHEPARD, JR., *Secretary*, 31 Chestnut Street, Boston 8, Mass. *Assistant Secretaries*, LESTER M. WHITE, 4520 Lewiston Road, Niagara Falls, N.Y.; RAYMOND E. WILSON, 8 Ogden Avenue, Swarthmore, Pa.

## • 1913 •

Early returns from Bill Ready's letter, asking for \$5.00 class dues in this reunion year, are very encouraging to our expectations for a large attendance at Oyster Harbors Club in June. Another straw in the wind is a dearth of class notes mate-

rial in these replies which I take to indicate that most of us prefer to talk in June rather than to write now. Here, in the style of Winston Churchill, is a short gem from Ed Hurst, II: "Our 40th reunion should be crowded with events that will become fond memories during the balance of our terrestrial sojourn and a source of continuing inspiration when we are cavorting with angels up above. Our classmates are a remarkable group of men, and to swap stories of our experiences extending over 40 years should be at once enlightening, intriguing, and, all in all, most enjoyable. Surely this is an opportunity none of us can afford to miss. Quite aside from the substantial benefits that will accrue, I think we will have a lot of good fun. For my part, I will be there if the good Lord spares me that long and there are no circumstances beyond my control."

Fred Lane, X: "I am only a year late as you will note by the date above. Never mind! I doubt whether any of the classmates read the class notes with greater interest than I do. Yet, I am sorry to say that my contributions to class news have been pretty meager, possibly because I have felt the lack of very exciting news to report. Am still with the Chemical Corps (formerly the Chemical Warfare Service), stationed at the Army Chemical Center, near Edgewood, Md. Work has been largely with developments on the defensive side. Am certainly planning to be present at our 40th, which should be a grand affair."

Allison Butts, III: "It does not look as though I can make the big reunion, since it comes at the same time as our commencement exercises at Lehigh. But I'm still hoping. I am sure you will need the \$5.00 for preliminary arrangements anyway."

Clarence Berry, VI: "I am enclosing my check for \$5.00 to cover class dues for 1953, and I am certainly looking forward to seeing you at Oyster Harbors Club on the Cape next June. As you will note from this letterhead, I am still with the Consolidated Gas and Electric Company in Baltimore and head up the Lighting Service Department. This year I had the good fortune to win a bronze plaque from the Edison Electric Institute for industrial lighting. This makes the third trophy which I have won in the lighting game. I have also been nominated for regional vice-president in the Illuminating Engineering Society, the engineering group in which I am most interested. My hobbies remain about the same — boats and automobiles. I enjoyed the last reunion we had, and I hope we have as much fun at this one."

Jerry Lane, V: "Here are the five bucks. I hope to be at the reunion. I have not been back since the 25th." Harold Rand, I: "Having been a backslider since the 25th reunion, I am getting a boot out of being asked to serve on the committee for our 40th. Mrs. Rand and I are both looking forward to next June 13, 14, and 15. Hope you get a good response to Bill Ready's latest letter."

Dave Stern, V: "Herewith enclosed is Pop Ready's touch for five bucks for 1953 dues, and so on. I certainly look forward to the 40th reunion at the Oyster Harbors

Club in June and will make every effort to attend it. We are still grinding out cans at good old Stern Can Company with three generations of Sterns at work: my father, my brothers, Harry and Sol, and my son, Stuart. I believe I wrote you last year that I had been elected president of the Jewish Memorial Hospital located in Roxbury, Mass., a 122-bed hospital. Early this month, I was elected president of the Can Manufacturers Institute, which is the national organization of can makers. You may well imagine that I have a lot of time on my hands. I now have four grandchildren, one of them a girl, and perhaps one of my grandchildren will someday attend the Institute."

Jack Coe, X, a man by no means given to overstatement, says about the reunion: "Sounds very good." Jim Beale, XI: "Still peddling securities for Stone and Webster Securities Corporation. Have been with them for 37 years and hope to make it 40 and quit. Son, married, with three daughters, living in Seattle, Wash., is a professor of music and is writing symphonies which I can't understand. Daughter married and living in Paris, France. No children. The 'old bean' better retire and start traveling. See you next June." Tom Byrne, IV: "Enclosed find my check for \$5.00 as class dues for 1953. Am looking forward to our fortieth and expect to see Andy Vogel of Schenectady and Harold Crawford of Walla Walla, Wash., of Course IV, there. With best wishes for a fine reunion."

Wood Selfridge, II: "Am planning to break down and join you in June. Anything can happen, though, so I'll keep my fingers crossed. How about a reservation at Oyster Harbors for twin beds? Too early?" Marion Rice Hart, X, a declared allergic to reunions: "Celebrating a 40th anniversary is rather a gruesome pastime, and I don't see why you all want to get together and look at each other — but have fun — if I'm in the country I'll fly over Oyster Harbors and drop a wreath on you. I'm having a book (untitled) published in the spring." Marion, please attach a copy of your new book with the wreath to be dropped on us.

Following is an excerpt from a letter to Bill Ready from Gil Pardey, VI: "I expect and hope to see you all on the Cape next June. Mine has just been the ordinary, uneventful sort of life, setting nothing on fire and with perhaps a little more than ordinary share of troubles. Five years ago, just as I was planning to come to the '48 reunion, I went to the hospital instead, where I damn near cashed in. Did not return to work for four months. Since then, however, enforced good diet and living plus a daily dose of insulin has done wonders. Today I have no trouble except a stiff knee joint that makes walking somewhat of a chore. On the credit side, I am most happily married for the second time, and have two of the nicest daughters anyone could wish for. One is a very successful business girl and the other a registered nurse, both working in New York City and neither married. I am still with the Westinghouse Corporation in the Engineering and Service Division, in charge of outside service work in this district, a rather exacting job with plenty of variety, many headaches, and a fair, but far from



luxurious, income. Due to a compulsory age limit of 65, I will retire in 1955. After that I am hoping to return to New England — no Florida for me." Gil has shown great courage in bearing up against more than his share of troubles, including the loss of his first wife, and I do hope he will be with us in June.

Bob Tullar, II: "Not much news except I'm looking forward to our 40th in June. Had a nice trip to Guatemala last spring with Mrs. Tullar and Jean, my daughter. Jean is an ensign in the WAVES at San Diego. My nephew, who grew up with us, is a superior court judge in Tucson, Ariz., and we've been lucky enough to visit him about once a year. Was shocked to hear about Hap Peck's death. Hope to see you in June."

Address changes: James M. Beale, XI, Stone and Webster Securities Corporation, 49 Federal Street, Boston 6, Mass. Richard B. Cross, VI, 3238 R Street, N.W., Washington, D.C. Charles F. Haglin, II, 123 North Bryant, Minneapolis, Minn. Clifford A. Lloyd, IV, A. J. Rife Construction Company, 2608 Inwood, Dallas, Texas. Louis C. Rosenberg, IV, York and Sawyer, 101 Park Avenue, New York City 17, N.Y. FREDERICK D. MURDOCK, *Secretary*, Murdock Webbing Company, Box 788, Pawtucket, R.I.

#### • 1914 •

It was with the greatest of pleasure that early in November a telephone call was received from Arthur Collins telling that he and Mrs. Collins were in Boston. It will be recalled that Collins has spent practically all of the time since graduation in England, and, since the end of World War I, has been associated with the Air Ministry. He recently retired from this post where he held the position of director of works, which means that he was responsible for all airfield construction. The trip to this country was for pleasure and followed an earlier trip to Africa. Collins is still associated with the Air Ministry as a member of a Special Advisory Committee. On the day that Collins called, Dean Fales, with Mrs. Fales, had ventured out of Maine retirement and were visiting your *Secretary*; therefore, it was possible to have a miniature '14 reunion dinner at secretarial headquarters. Collins lives at Bromley, just on the edge of London, and would like to hear from any classmates who may be visiting that city. The address given in the small directory published at our last reunion is still correct.

Walter Monahan of Quincy, Mass., telephoned recently saying that he was leaving for Mexico to spend the winter there. From the number of '14 men who do this sort of thing, or its summer equivalent, in foreign travel, your *Secretary* concludes that the wanderlust spirit must be strong in many members of the Class. Walter's excuse is that he wants to do some more travelogue writing.

The following is an extract from an article which appeared in the *Hardware Consultant and Contractor*: "The H. A. Sward Co., of Inwood, Long Island, N.Y. announce that Duncan Shaw has been appointed executive vice-president of its subsidiary, Oley Products Inc. of Oley,

Pa. Mr. Shaw, an associate member of the National Contract Hardware Association and a graduate of . . . Technology, recently resigned as president of Arrow Lock Co., of Brooklyn, N.Y. to accept the Oley position. He was formerly president of Reading Hardware Corp., general sales manager of P. & F. Corbin Division of the American Hardware Corporation, and general sales manager of Lockwood Hardware Mfg. Company.

"One of the best known men in the builders' hardware industry, Mr. Shaw will concern himself principally with sales, advertising and product development. . . . Mr. Shaw has set up a national sales office at #7 East Madison Avenue, Dumont, New Jersey, where he may be reached by mail or telephone." — H. B. RICHMOND, *Secretary*, General Radio Company, 275 Massachusetts Avenue, Cambridge 39, Mass. ROSS H. DICKSON, *Assistant Secretary*, 126 Morristown Road, Elizabeth, N.J.

#### • 1915 •

Our Class has suffered a sad loss in the passing of Gene Place who died December 4, 1952, in Pasadena, Calif., after a long illness. You all remember Gene in the best of spirits at our 35th reunion at Coonamesett in June, 1950. Suddenly stricken that fall, he underwent serious cerebral surgery, from which, after long hospitalization, he made a remarkable recovery. But further and even more delicate surgery became necessary. Again, with indomitable spirit, Gene fought his way back. His recuperative powers were simply astounding and a fine tribute to his marvelous determination and bravery. In the fall of 1951, he had sufficiently recovered for Ruth and him to drive to the Coast.

In fact, Hank Marion saw them in April, 1952, and wrote: "What a home they have! And in spite of the fact that they have only been in it a couple of months, Ruth has everything in its place, including new curtains and everything else that has to be new in a new home, just as though they had been there for the last five years. Gene and Ruth are both fine, and Virginia and I certainly envied them in their new home and surroundings which are just about perfect." Shortly after that, Gene began to fail, had further surgery and suffered a long illness which was just too much for even his powerful courage. Through all this long, hard siege of illness, Ruth and their son Bill (M.I.T. '43) were his constant and devoted companions and helpers.

Born in Woburn, Mass. Gene graduated from Andover Academy and took Course VI with us. A member of Theta Delta Chi Fraternity, he was an active leader in undergraduate activities — a member of the Electrical Engineering Society; Vectors; Junior Prom Committee; Class Day Committee; and class treasurer (senior year); Freshman Class Relay; Sophomore Class Baseball. With Hank Marion he did a thesis, "Hoosac Tunnel [Massachusetts] Electrification." In alumni work, Gene was a generous supporter and willing worker and was the organizer and

original chairman of our 50th Reunion Capital Gift Committee.

He was vice-president and sales manager of the American Mutual Liability Insurance Company of Boston, and, after going West, became general supervisor of its West Coast operations. Long active in Massachusetts civic and insurance affairs, Gene had been a director of the Massachusetts Safety Council and chairman of its engineering section; secretary of the Textile Council; a member of the American Society of Safety Engineers; and, while in New York, a member of the Advertising Club and the Union League Club.

With his rich sense of humor, his genial personality and his gay spirit, he was outstandingly popular with a host of staunch friends. He leaves his wife, Ruth Prior Place; son, E. William, of Redmond City, Calif.; and a sister, Mrs. Edith Johnson of Woburn, Mass.

The Class wired flowers and an expression of our sympathies to his family. In addition, many classmates sent individual messages and flowers. In answer, Ruth wrote: "To his wonderful Class of 1915 — Your tribute to Gene was so thoughtful and beautiful. My son, Bill, and I want to tell you how much your remembrance of him meant to us. It was really comforting in our great loss. Gene's fighting spirit of the past two years and his courage and bravery during his long illness and ordeal can be an example to all of us. Gene was loved by all and, as one wire to me expressed it, 'A wonderful man has left us.' Gene was so fond of all of you and thank you for standing by, as you have."

From the many letters '15 classmates have written about Gene, I quote two which seem to typify our combined feelings: Ben Neal in Lockport, N.Y.: "It was heart-rending to realize that Gene has passed on. He put up such a brave fight, battling impossible odds. He was such a grand guy that the void he has left us will remain until the last Fiftener who knew him, passes on." Tower Piza from New York: "The Class of 1915 has lost a loyal, deeply loved friend. We shall all miss him whenever good fellows get together but, even more than ever, we shall count upon Ruth to help fill the place that Gene has left."

Classmates who would like to write or see Ruth can reach her at Hotel Greene, Pasadena 17, Calif.

It seems only fitting to dedicate this month's class notes to Gene as a small expression of our tribute to him as a classmate and a friend and the memory he leaves with us to cherish. — AZEL W. MACK, *Secretary*, 40 St. Paul Street, Brookline 46, Mass.

#### • 1916 •

We acknowledge with thanks the lovely cards bringing us holiday greetings from Joe Minevitch, Bill Barrett, Herb Gilkey, and Izzy Richmond. Changes of address received this month are as follows: Joel I. Connolly, M.S.A.-S.T.E.M., A.P.O. 928, c/o Postmaster, San Francisco, Calif.; William W. Dodge, Jr., Paragon Building, Ashville, N.C.; Kenneth Eldredge, 53 Im-

lay Street, Hartford, Conn.; Ernest C. Gagnon, Hurtsboro, Ala. (back from Lima, Peru); Howard A. Hands, 44 Abbott Road, Wellesley Hills 82, Mass.; Merrick A. Monroe, 34 Beach Drive, Noroton, Conn.; Olen C. Norris, Apartment 8, 59 Maple Street, Springfield, Mass. Bring your lists up to date.

It was good to hear from Jack Camp again. He writes: "The reason I could not attend the reunion was that I had planned for some time to attend the Centennial of Engineering in Chicago, and two trips in one year, as far away from home as that, are more than I can stand. The Centennial was really something and it was good to see a lot of my old friends again, several from Boston and some from New York, as well as others from other parts of the world."

Chuck Loomis reports that he has not been swamped with \$1,000 contributions to the 1916 50-year gift fund and the Alumni Fund, but that he has located seven or eight men, in addition to the original five, who may be willing to join this group later, perhaps this year. At least they did not give him a firm "no." Of course, what Chuck is trying to do is to get a number of us to make more substantial contributions to the Alumni Fund than we ordinarily would, and in that way build up our 50-year gift fund. M.I.T. will be glad to credit these gifts to both funds. Chuck will settle for a lot less than \$1,000 — and he would take more! Maybe you will want to put the 50-year gift fund and the Alumni Fund higher up on your list of giving for 1953.

In his fund-raising activities, Chuck has picked up news of our classmates and writes as follows: "I have picked up a little news that may be of interest to you: Bill Dodge, Jr., went back to World War I with his history, as follows: 'You may not remember, but I had designed a bombsight and an antiaircraft sight (of which the latter, by the way, was used in this last war), and a combination rifle and hand grenade; and the place I went depended on which one I wanted to work up. I was in Paris until after the Armistice, and after I got back here and helped design the Michelin bombsight, I went to the hospital as a result of the gas and put in 16 months. After that, I taught physics for a year, and then went to the hospital and to bed for a year and a half. Apparently they did a pretty good job on me that time, or perhaps I learned how to take care of myself, but I have been in pretty good shape since. It seemed wise for a long time to live in Ashville, and, of course, I put roots down and am here permanently.'

"Kem Dean reports that Lev Lawra-son '17, surprised him a few weeks ago when he drove into his driveway. Lev was on his way to St. Francisville, La., his old home town, to pick up his sister and drive her back to California, where Lev is living now. Don Webster writes that he has four teen-aged sons, 'all raring to be educated. The oldest, 19, now is a sophomore at the University of Maine. Twins, 17, are ready for college next year, and the young one, 14, comes up for treatment three years hence. None of them at this writing

is headed for the Institute.' Henry Shepard, if you haven't already covered the matter, left Stowe-Woodward a couple of years ago and established his own manufacturers' representative company, known as the Shepard Equipment Company. Ted Jewett is vice-president in charge of production and engineering and also a director of Spencer Kellogg and Sons, Inc. He is a trustee of the Buffalo General Hospital and on the board of the Children's Hospital. He has a son who is still specializing in his training for surgery and a daughter who married a doctor who hasn't hung out his shingle yet." Thanks for a very fine contribution to our column, Chuck.

Here's a letter that pleased us very much from Joel Connolly: "In order to start the new year properly, I'll write you a little news, just in case you have a little corner to squeeze it into. We are enjoying summer weather while we can. Soon it is expected to be too hot to enjoy it, but everyone tells us that we came to Manila at the best time of the year, both to escape the rigors of a Chicago winter and to enjoy the cool season in this tropical climate. Yesterday, January 2, the official temperature reported in the daily newspapers ranged from a low of 70.2 degrees F. at 5 A.M. to a high of 85.8 degrees F. at 1:30 P.M. With a good breeze as there seems to be here most of the time, that isn't hard to take. Concerning why I am on the other side of the world, I have been given an appointment by the Mutual Security Agency of the United States to do work here in conjunction with the Philippine Department of Health. My work at present is concerned with a program to improve public water supplies, and cut down the amount of water-borne disease. This reduction in loss of time due to illness and preventable deaths will, in the course of time, be a factor in improving the economic status of the Philippine Republic, as well as being a humanitarian endeavor to alleviate and prevent pain and sorrow. With best wishes to you and M.I.T. Alumni for a healthful and happy new year."

A release from the Engineer Center, U.S. Army, Fort Belvoir, Virginia, brings us this news of Al Lieber: "Farewell Review Tuesday For Brigadier General Lieber — Engineer troops undergoing basic training at the Engineer Center, U.S. Army, will pass in farewell review tomorrow, December 30, at 2:30 P.M. in honor of Brigadier General Albert C. Lieber, commanding general of the Engineer Replacement Training Center at Fort Belvoir. General Lieber is leaving the Engineer Center to take over duties at the office of the Chief of Engineers, Gravelly Point . . . General Lieber, who has been in command of the ERTC since its reactivation in August 1950, holds a varied background in 35 years of service with the Corps of Engineers. He entered the Army as a 2nd Lt. in the Engineer ORC in June 1917, and during W.W. I served as a company officer. Following the war General Lieber saw duty in the Canal Zone and later served with the District Engineer in Boston, the Eastern Engineer Division, and as District Engineer in Iraq and Iran. During W.W. II he served as an Engineer G-3, Deputy Chief of Staff,

and Chief of Staff in the European Theater of Operations. Following his return from Europe in 1946, General Lieber served as a member and Deputy Chief of the Plans Division, Army Field Forces in Washington, and later at Fort Monroe, Va. From early 1948 to 1950 he was a member of a Special Joint Planning Group in Washington. He was promoted to brigadier general on October 20, 1950." Good Luck, Al, on your new assignment.

You will recall that we recently reported the appearance of Steve Berke in *Life* magazine. Here Steve gives us the inside story: "Of course to make *Life* is an achievement, so I am told, and along with it to be photographed with such a distinguished group of M.I.T. professors playing hookey from their cyclotrons and calculus was really soaring into a new firmament for a construction man. To let you in on a secret, however, the young men encircling me were not professors but members of the newly established School of Industrial Relations." Steve's company, Berke-Moore Company, Inc., is currently constructing the sub- and superstructure of the Charlestown Connection of the J. F. Fitzgerald Expressway (central artery) in Boston and the dike and the underpass on the relocation of Route 5, West Springfield, Mass. Good to hear from you, Steve.

We recently had a note from Frank Bucknam in answer to one of our recent requests, saying that he has no particular news and that he is doing the same work that he has been doing since 1919; namely, fire protection and fire prevention engineering with the Factory Mutual Engineering Division. He spends his vacations in Nevada — Caliente — where his daughter, her husband, and two grandchildren live. He goes on: "The last few years I have taken three-day camping trips by auto with my son-in-law, exploring out-of-the-way places in Nevada and southern Utah. We travel on secondary roads and some that are not even shown on maps, sleeping under the stars and cooking our meals. We always carry five gallons of gas, five gallons of water, and extra oil, since water is particularly hard to find at times. Once a year I get East for three days, but this is in March and doesn't make it possible for me to attend many reunions, inasmuch as I usually take my vacation in June."

Having talked with Eddie Ekdahl just as he returned from a trip to Venezuela, we asked for an accounting of activities since he was laid up last March. And he has complied generously with the following: "My long bout with the crippled leg lasted from last March till the first week in October. Three operations — one to get bone for a bone graft — put the leg into good operating condition again; and I had to have a long convalescence period of about four months. I got the surgeon's O.K. to go back to work early in October, and almost immediately left for South Carolina to take a look at a mining and processing plant turning out much needed Kyanite. Getting back from this project in November, I took off again for Venezuela and the oil fields on Lake Maracaibo.

"Took off by plane from Miami about the 14th of November and had a delight-



ful trip by K.L.M. (I can certainly recommend the airline. When they aren't filling you up with delicious food, they ply you with smokes and nearly any drink you can name.) Stops came at Havana, Cuba, Kingston, Jamaica, and Aruba, Dutch West Indies. Last stop for me was Maracaibo, Venezuela. Here I was lodged at the quarters of the Mene Grande Oil Company for about a week, and then spent the next couple of weeks at the oil fields on the opposite side of Lake Maracaibo from Cabimas Field, through the Tia Juana Field, the Langunillas Field, and briefly at the Bachaquero Field. Three major oil companies operate here — Gulf, Shell, and Creole (Esso). The interesting part of these fields is the fact that the bulk of the wells are driven in the lake and not on the foreshore, or hinterland. The oil derricks form a forest of steel fingers far out into the lake as far as you can see. The daily take is about 1,000,000 barrels, I think, and that has been going on for 15 to 20 years, so much so, that the land along the lake has sunk about 20 feet and a concrete dike has been erected to keep out the waters from the installations and villages. We visited Venezuela at the right season. The rains were just over, but it was still hot.

"Breakfast and work are early, to get the cool of the day. By 10:30 in the mornings, we were resorting to undershirts and shorts to keep cool. The heat is on till about 4:30 P.M. and then the evenings are delightful. I didn't get a chance to go back into the mountains which are visible to the south and east of the fields, and which run up to about 15,000 feet. Neither did I get to Caracas as I had hoped to do, so scenically, the trip in Venezuela was little to brag about. Lake Maracaibo, which is about 100 miles long, and 50 miles wide, does not have its beauty enhanced by derricks and floating oil scum. Maracaibo is not a tourist center. It's chiefly oil. There's no other particular interest or industry thereabouts except oil. Everything is expensive, more so than the U.S. We ate \$2.00 breakfasts, \$3.50 lunches, and \$4.00 to \$5.00 dinners. Best food was fish and I, who don't like fish, found it delicious. The meat needed plenty of tenderizing. We liquidated on rum and Coca-Cola mostly. I figured our Cokes cost us more than the slug of rum, because Cokes were 20 cents a piece, and rum was only \$2.00 a bottle.

"I tried hard to get some native craftsmanship, but found little except beaten gold orchids which were too expensive for my taste and useless for my collection of oddities. I could, however, have bought some Matalone Indian arrows, spears, and other weapons which are made by an unreconstructed wandering tribe of very inhospitable Indians who inhabit the lake shore south of Maracaibo, about two hours distant by car. They migrate seasonally from the backbone mountains, separating Venezuela from Colombia, to the lake front and keep the area pretty well cleared of whites, despite Venezuelan soldiery. They have wiped out not a few of the oil crews, I am told, who have ventured too far afield prospecting. Maracaibo has some very beautiful homes, is a clean city

and interesting for a short while. Hotel accommodation was quite good — but entertainment wasn't crowding on spare time. In fact, it was dull.

"Altogether I was gone a month, of which the most enjoyable was the plane trip over the Caribbean. I had hoped to stop over in Miami long enough to do my Christmas shopping, but I contracted some more bugs the last day or days in Maracaibo and spent most of Miami time in bed nursing a sick stomach — from which, thanks be, I have recovered, but at a cost of 10 pounds in weight. That's the works. It's not too interesting, but it's been a diversion from the humdrum of New York life. Had a nice Christmas get-together with Dewey, my one and only offspring who was back from school at Buffalo. He's in his junior year at the State Teachers College where he is majoring in art. Will have him with me on a trip up to Boston over New Year. My best wishes to all '16 men." Thanks a lot, Eddie — glad you're back in harness again.

We are sorry to have to report, and we are a bit tardy on this, the passing of our classmate Arthur T. Munyan, who died September 13, 1952. We also are sorry to inform you of the passing of Howard L. Foster, who died on December 13, 1952. Many of you will recall that Howard won fame in the Pennsylvania oil fields for his efficiency in sinking wells. He won the distinction of having sunk the deepest oil well at the lowest cost per foot in the history of the industry a few years back. He recently had been associated with a Detroit engineering laboratory.

Many thanks for your generous response to our questionnaire letter on reunions. It was both heart-warming and extremely interesting. Replies continue to drift in. If you haven't written to us on reunions, how about doing it right away. We are in the process of analyzing the returns right now, and will bring to your attention in the near future the majority opinions of the class members on the subject of reunions. Keep your letters coming. It's good to hear from each and every one of you. — RALPH A. FLETCHER, *Secretary*, Post Office Box 71, West Chelmsford, Mass. HAROLD F. DODGE, *Assistant Secretary*, Bell Telephone Laboratories, 463 West Street, New York, N.Y.

## • 1917 •

A recent issue of *Women's Wear Daily*, sent to us by Ken Childs, carried an interesting news item about Ken Richmond, who recently completed 25 years of service with Abraham and Straus, the large Brooklyn department store. He joined the firm as comptroller and has served since then as vice-president and treasurer since 1943. In recognition of his services, Ken was presented with a scroll, an inscribed silver tray, and a gold wrist watch. Not a bad haul for one day.

We have changes of address for: George Abbot, 2d, 3260 Gray Street, Denver 14, Colo.; Hubert W. Collins, 809 Elizabeth Street, Fort Collins, Colo.; Captain Earl F. Enright, General Armature and Manufacturing Company, Mill Hall, Pa.; Francis Goodale, R.D. No. 1, Stroudsburg, Pa.;

Colonel John J. McCormick, R.F.D. No. 2, Bedford, Va.; Duncan MacRae, R.F.D. No. 2, Bel Air, Md.; Colonel Walter L. Medding, Engineer Center, Fort Belvoir, Va.; Seldon W. Senter, Post Office Box 699, Shreveport, La.; Joseph B. Wirt, Post Office Box 24, Wheatland, Calif. We should be delighted to have some news from any of these gentlemen.

Advice from Washington, as we go to press, confirms that prominent among the special guests of President Eisenhower at the Inaugural Ball were Neal and Janet Tourtellotte of Seattle — and that society reporters noted Mr. T. as being the only gentleman present in full evening dress wearing *two* white ties. — RAYMOND STEVENS, *Secretary*, Arthur D. Little, Inc., 30 Memorial Drive, Cambridge 42, Mass. FREDERICK BERNARD, *Assistant Secretary*, 24 Federal Street, Boston 10, Mass.

## • 1918 •

The capacity to distinguish value from price, or reverence from worship, or beauty from newness, is, alas, far too uncommon. But among us '18 men, Sam Chamberlain has always been a brilliant exponent of the latter discrimination. Now Sam has added to his long list of publications a book entitled *Boquet de France*, (New York: Gourmet Inc., 1952, \$10.00). It is illustrated by some 150 photographs, plus etchings and pencil drawings; all of Sam's creation. Those who can still afford to be inwardly lined with costly groceries will enjoy the inclusion of recipes from the French provinces which enjoy local popularity. Wonder if fried snails are included. I tried them once. No thank you.

There's been some talk between Seltzer and Magoun as to a pre-reunion get-together in Boston come March. Rumor hath it that they discussed adopting "Good Clean Fun in the Kitchen," as a possible topic, the appropriateness being an invitation to Mike Flett to address the assembled on detergents and other soap substitutes. Speaking for himself, Lawrence Hugo Flett (class Relay Team manager; *Technique* photograph editor; Tech Show participant; Chemical Society; and Beaver Key) says under letterhead of the National Aniline Division of the Allied Chemical and Dye Corporation: "During the past year, my youngest daughter was married and is now living in Sweden; and on October 1 our book on chemistry, *Maleic Anhydride Derivatives*, was published by John Wiley and Sons. I have lost count on books by such authors as Chamberlain and Magoun. Forgive the nickname. I haven't learned any new ones since I left M.I.T. — perhaps an indication that people really do stop learning once they have been graduated." Note that "been graduated."

Among the enthusiasts for the coming reunion are some new stalwarts, including Leonard Levine who had such a landslide of a time into old and happy far-off things at the pre-Alumni Banquet get-together, held at the University Club last June. He not only has mapped out the route from 46 Ferncroft Road, Waban, to Weekapaug, R.I., he volunteers to help the Reunion Committee in any way. He says:

"It certainly was nice to see you at the recent reunion — 34 years is a long time, but the bond really seemed very close after all these years. It really was a treat for me to be with the boys that were there. I have been very negligent in attending reunions in the past but will make up for it in the future."

George Halfacre says: "Hope your 35th reunion plans mature satisfactorily. Mrs. Halfacre and I thoroughly enjoyed the one we attended (20th) at Weekapaug and will plan for this one. As for pertinent statistics, they follow the usual pattern: still a metallurgist, general superintendent for New Jersey Zinc at Palmerton. Three children: Robert, Lehigh 1950, metallurgist; George, Lehigh 1950, teacher; Patsy, Western 1952, teacher. Three granddaughters. Positively, Republican; negatively, not printable. Author, no. Patents, yes. Public service, no. Hobby, family. Retirement, in no hurry. We have been looking over Florida for a winter abode. Pennsylvania tops otherwise."

Dean Hanscom doesn't say whether or not he will be at reunion, but he gives a delightful thumbnail sketch of himself despite the opening protest: "Another questionnaire! If it weren't from you and for the Class, I'd buck. But here it is: Member of staff, Bell Telephone Laboratories, 463 West Street, New York. My job is the development, manufacture, and supply of lecture aids to Bell System lectures. These aids are gimmicks, ranging from a floating (in air) magnetic bar, to a complete 10,000-megacycle microwave radio set for transmitting about 25 feet (i.e., across a stage). They illustrate technical advances in the telephone business. Married (Marcellite Thorn Ropes), no children. Republican. No publications except short articles. Three patents on switching devices for telephone use. No public service, except on Planning Board and Library Trustee in Denville, N.J., some years back. Member of Masons, Lions, associate fellow and benefactor member of Institute of the Aeronautical Sciences. Hobbies: antique collecting, a little photography, stamps. Unfulfilled ambitions: too many! Retirement: My wife and I have a small antique business, which I plan to devote full time to when I ultimately retire some years from now."

G. Donald Bradley sends regrets, as well as he may from 3,000 miles: "I have received the first of the series of communications for the 35th reunion and I regret to say that I do not expect to be in the East around the middle of June in 1953. I am in the building supply business and that is our busy time. I usually plan to make my trips during the months of January and February. I just can't be there. I see Sax Fletcher quite often as he now has a Seattle office, and I also see him in New York about once a year, so keep up pretty well on the class news. I am enclosing a card showing the companies manufacturing building specialties which we represent in the state of Washington and in Alaska."

"Neal Tourtellotte, Class of '17, and myself, operated a corporation under the name of Tourtellotte-Bradley for 25 years, but this was dissolved in 1948 into two

companies; namely, the Tourtellotte Corporation and the G. Donald Bradley Company. Each of the companies now is larger than the original partnership and both are having a very successful operation. I have one boy, Don, Jr., who was a senior at the University of Washington last year when he enlisted in the Air Force, and is now stationed at Elmendorf Field, Anchorage, Alaska, with the 39th Bomber Repair Squadron as a sergeant. I regret very much not being able to make the 35th reunion, but I will have to try to make one of the later ones in the not-too-distant future." — GRETCHEN A. PALMER, Secretary, The Thomas School, The Wilton Road, Rowayton, Conn.

## • 1919 •

Received holiday greetings from Fred Given. He is now director of apparatus and material engineering of the Sandia Corporation, located at Sandia Base, Albuquerque, N.M.

Had a very nice note from R. S. Holmgren, which I quote: "Life for me continues its steady course here in what used to be sleepy San Diego, but now a city with a metropolitan population of half a million people, doubling in size each 15 years. My job has been to help get enough water into the area to permit continued growth. During the past year, final construction of the 72-mile San Diego Aqueduct was under way, which, when completed, will supply about 150,000 acre feet a year of Colorado River water to supplement the local supplies of the area, enough to satisfy our needs for about 25 years."

Since last summer, Dr. and Mrs. Murray P. Horwood have been living in Rangoon, Burma. Murray [16] is professor of sanitary science at M.I.T. and director of the project which M.I.T. is sponsoring in connection with a joint educational program with the Technical Cooperation Administration and the Union of Burma to the engineering school at the University of Rangoon. Its object is to help the university build up its curriculum and laboratories in the field of engineering. A very interesting experience is being encountered by both, and they are learning a great deal about the psychology and customs of the Far East.

Reg Hunt writes: "During the past year my hair has become a little more gray; my waistline a little (?) larger, and my feet a little flatter. My best sport is sitting in a chair and reading during the evening, until my wife asks me if it would not be more comfortable sleeping in bed."

Since May 30, 1948, S. Albert Kaufmann has been honored by the town of Wilmington, Mass., as one of the Memorial Day orators, with May 30, 1952, making the fifth successive yearly honor. He is still actively engaged as a professional land surveyor. His very best wishes are extended to all for the New Year.

Congratulations to Don Kitchin on his election as chairman for the National Conference on Electrical Insulation of the National Research Council for the year 1953. He presented another paper at the October meeting of the Insulation Conference, held at Lenox. He is now "Six Times a

Granddad," the latest arrival being Donald Nickerson Kitchin, son of Professor (of Northeastern University) and Mrs. Charles E. Kitchin. Don, Jr., has gone to Pottstown, Pa., to the Jacobs Aircraft Company as a mechanical engineer. Understand that Don, Sr., still experiments with electronics as a hobby and has recently made some very fine recordings.

"The Scientist-Engineer — A Dynamic New Team" was discussed by Earl P. Stevenson, President of Arthur D. Little, Inc., nationally-known consulting research and engineering firm of Cambridge, Mass., at the American Association for the Advancement of Science annual meeting held in December, in St. Louis, Mo. He added: "Organized creative technology is largely responsible for the position of the United States in world affairs today," and explained creative technology as the translation of new scientific knowledge into terms of useful devices, saying that it was largely due to a system of teamwork among engineers, scientists, and manufacturers for utilizing the results of science.

Mr. Stevenson is a consultant to the Department of Defense and the Chemical Corps and is a member of the Advisory Committee to the Massachusetts Civil Defense Agency. In 1950, he was elected director of the American Institute of Chemical Engineers and recently he was appointed by President Truman to the National Science Foundation. He is chairman of the Panel on Management and Research of the Committee of New England, National Planning Association, and was recently elected a director of the Liberty Mutual Insurance Company. He is also active in educational circles and is a trustee of Northeastern University and president of the Board of Trustees of Wesleyan University.

Greetings were extended to all from R. B. MacMullin, of Niagara Falls, N.Y. Donald D. Way advises that George McCreery's name will appear on the March ballot for representative of the Class of 1919. — EUGENE R. SMOLEY, Secretary, The Lummus Company, 385 Madison Avenue, New York 17, N.Y.

## • 1920 •

Reading the January issue of The Review recently, your Secretary couldn't help feeling that we have in The Review one of the finest publications of its kind produced anywhere and we ought every now and then to express appreciation of the interest and value it holds for every M.I.T. Alumnus, in addition to being the invaluable vehicle for class notes. Specifically, I hope every one of you took the time to read the article by Alexander Magoun '18, and Carter Nyman, entitled "The Two Philosophies." It was one of the most stimulating and far-seeing presentations I have ever had the good fortune to come across. Because of my close association with Raytheon Manufacturing Company as their advertising counsel, I was also much impressed with the story on transistors in this same issue. It was exceedingly well done.

Good, thoughtful K. B. White remembered his aging and balding Class Secre-



tary, as he has these many years, with one of his distinctive handmade greeting cards bearing his joint Union City, N.J., and Paris addresses; the former, 1300 Manhattan Avenue, the latter, 1 Villa Jocelyn, Paris 16. Professor Francis W. Sears is now living in Belmont, Mass., address 63 Pinehurst Road. Reverend Kenneth L. Danskin is in San Bernardino, Calif., address 2698 Harrison Street. George Corr is in Boston, address 545 Beacon Street.

This winter the news famine from the Class of 1920 seems even more acute than usual. However, being an incurable optimist, I confidently expect some additional paragraphs, come spring. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

## • 1921 •

Palmer Scott, head of the New Bedford, Mass., shipyard bearing his name, came in for considerable prominence at the New York Boat Show, where he exhibited a 22-foot bass boat having a fiberglass hull of seven-and-a-half-foot beam, drawing two feet. A 95-horsepower engine whips this trim boat along at 21 miles per hour, making it popular with fishermen who like open-cockpit craft and who want to camp out for a night or two. Other fiberglass boats built by Palmer include two 18-foot models, one for outboard motors and the other for a 60-horsepower inboard engine.

Glenn E. Fargo has now established his own business, the Fargo Company, at 6211 Second Street South, St. Petersburg, Fla. William R. Ferguson has returned to New Jersey, where he makes his home at 187 North Oraton Parkway, East Orange. Walter W. Kittredge has moved from Mt. Carmel to Cheshire, Conn., where his mail address is Route No. 3. Edward M. Richardson has a new home address at 1630 King Street, Scotch Plains, N.J. George F. B. Owens has retired from the Brooklyn Union Gas Company and is basking in the sun at Ocean Villas, Vero Beach, Fla. We have had no news of George since the passing of our neighbor and his former associate Henry Gayley, who used to keep us informed of George's doings. Promotion from lieutenant commander to commander has come to Bernard H. Moran. He makes his home at 3222 South Glebe Road, Arlington, Va. New addresses have been received for Allen D. Addicks, William F. Boucher, Fred W. Marlow, Edward P. Molloy, William J. Regan, and John E. Shaw.

One of the most beautiful Christmas expressions was that of John W. Barriger, accompanying his leave-taking of his Monon associates, and we feel it should be passed on to you: "Christmas dawns on a world torn with strife, mistrust, unbelief, and, more tragic than all, disbelief. There have been few times in history when a reaffirmation of the principles of a Christian civilization were more urgently needed. Wars and threats of war — insidiously reinforced by the seed of communism which, while it flies like chaff, takes with it a power of germination that is inherently lacking in the latter — permeate

our midst. This background makes it all the more important that we should pause again on this most magnificent of all days to subject our aims and ambitions for the future to the radiation of the creed of good will to all men. We can do this if we will carry the power and beauty and the spirit and significance of Christmas day through future months. These characteristics are immortal, but they can be vitalized only by the constancy of righteous application." Along with Jack's holiday greetings, it is a source of deepest pleasure to your Secretary to have similar kind expressions from many others, including Max Burckett, Phil Coffin, Bev Dudley'35, Jeff Farmer'22, Harry Field, Dug Jackson, Andy Jensen, Jack Keck'23, Pete Korn'56, Jack Kriz'41, Chick Kurth, Moose LeFevre, Joe Maxfield'10, Bob Miller, Gus Munning'22, Helier Rodriguez, Ray St. Laurent, Lem Tremaine'23, Carlton Tucker'18, and Ken Wadleigh'43.

Alumni Day has been set for June 15, 1953, and we will hold another in the series of popular 1921 cocktail parties for all members of the Class, just before the evening Stein Banquet. Make your summer plans around this day. For those at great distances to plan ahead, the Sheldon House, Pine Orchard, Conn., has been reserved for our 35th reunion, which will probably be scheduled for June 7 to 10, 1956, and Alumni Day on June 11. If you are near Cambridge, go see the groundbreaking ceremonies this month for the new chapel and auditorium on campus. Wherever you are, watch theater screens for the RKO-Pathé short, *Men of Science*, photographed at M.I.T.

At a recent meeting with Orville W. Bennett, National Director of Cub Scouting, Bud told us about the very considerable work which Wally Adams is doing in the local Boy Scout Council, of which he is an executive board member. Wally and Mrs. Adams have two grown sons, a married daughter, and two grandchildren. Wally is specification engineer for Armco Drainage and Metal Products, Inc., Middletown, Ohio, and not far from our brother Pi Delt, Joe Patty'22, who is reported to be a Scout District Committee Chairman in the same area.

John W. Barriger continues in the news because of his move, printed in this column last month, from the presidency of the Chicago, Indianapolis and Louisville Railway Company to a vice-presidency and directorship of the New York, New Haven and Hartford, as yet with no departmental assignment. *Railway Age* published a long, illustrated article reviewing Jack's accomplishments in sharply increasing the Monon's freight ton-mileage, in bringing about spectacular improvement in right-of-way and rolling stock with resulting increase in operating revenue over wartime years, his outstanding public relations successes as well as his long-time background in railroad administration and operation, as well as his ties to New England which make him ideally suited for his new association. Jack has written a most gracious letter in response to our telegram extending good wishes. All of us will look forward to a continuation of his faithful attendance at class functions.

George Chutter sent a clipping on Jack from a Connecticut paper, which reprints a highly complimentary account from the publication of the Brotherhood of Railway Trainmen, calling Jack a long-time favorite guest at Brotherhood gatherings and citing his distinguished career all the way back to his earliest summer work on maintenance of way with the Pennsylvania when a freshman at Technology. Jack and Mrs. Barriger have two sons and two daughters. John and Stanley are respectively M.I.T.'49 and '55; Betty was graduated from Barat College of St. Louis University; and Ann from Wellesley last June. In a telephone call, George further advised that Rufe Shaw, his wife, and daughter are taking a leisurely cruise around the world and had sent greetings from Nairobi, Kenya. He also said he had had lunch recently with Royal Wood, Vice-president and Treasurer of the United Illuminating Company, New Haven, Conn. Woodie has four children, two boys and two girls. George has an appropriate home address on Middle Haddam Road, Portland, Conn., Route 6-A, and maintains his New Jersey office at 15 Exchange Place, Jersey City 2.

General Bob Neyland, coach of the Vols, Tennessee's famed football team which received one of its few setbacks at the hands of Texas in the Cotton Bowl on New Year's Day, is reported ailing from an infection and is in Florida pending a medical decision on whether he will be permitted to return to his post as head coach and director of athletics at the Knoxville university. The Sugar Bowl game must have been a thriller for Herb Thaden and his family. Son Bill, a Georgia Tech tackle referred to in press notices as a member of the Yellow Jackets' brilliant defensive team, came in for a large part of the glory of the season's undefeated record which ended with the 24-7 bowl win over Ole Miss. Herb heads the Thaden-Jordan Furniture Corporation, Roanoke, Va. He and Mrs. Thaden have a daughter, Patricia.

The engagement has been announced of Sondra Gerda to John M. Blewer, son of Frank and Mrs. Blewer of New York City and Sugar Hill, N.H. Frank is a partner in the financial house of W. E. Burnet and Company. Joseph C. Moosbrugger is vice-president and director of the Suburban Engineering Company, New York City, engaged in contracting and heavy construction. He is a trustee of the Mid Village Civic Association in his home town of Rockville Centre, N.Y., and a viola player in a string quartet. The Moosbruggers have a daughter and two sons. Another of the Class who is active in Scouting is Sam E. Moreton, Jr., who serves as a district commissioner when he isn't carrying on his duties as president and manager of the Central Lumber Company, Brookhaven, Miss. Sam has many local interest in the Lions Club, and as a director of the Brookhaven Bank and Trust Company and of the Mississippi Forestry Association. Daughter Janis, a Wisconsin graduate, is married and has a daughter; Charles was graduated from Georgia Tech and is a civil engineer; James is in high school.

Robert R. Worsencroft has been a professor in the Department of Drawing and Descriptive Geometry, University of Wisconsin, since 1923. His son, Robert, was graduated from Wisconsin in '49, and his daughter, Helen, in '52. David Steidlitz heads a general insurance agency of the same name in Rochester, N.Y. He and Mrs. Steidlitz have a son who was graduated from the University of Rochester and obtained his M.A. at Buffalo. Viviano L. Valdés has his own consulting civil engineering firm in Mexico City. He is a director of Ladrillera Monterrey and of Banco de Monterrey, and a member of the Sociedad de Ingenieros y Arquitectos de Mexico. He and Mrs. Valdés have two daughters and two sons. Eugene S. Weil is vice-president of the chemical distributing firm of G. S. Robins and Company, St. Louis, Mo. A member of the American Chemical Society and former president of the M.I.T. Club of St. Louis, Gene and Mrs. Weil have three children: Nancy, a Wellesley graduate; Eugene, Jr., and David. William D. Morrison, a major, Corps of Engineers, is post engineer of Camp McCoy. Son William, Jr., is an architect; Mary is teaching school; and Robert is in the Army. Charles A. Morss is a design engineer on aircraft engines with Pratt and Whitney, East Hartford, Conn. Daughters Sylvia and Marilyn are married, and Charles, Jr., is at Yale.

It is with deep regret that we record the death on September 8, 1952, of Joseph Henry Carr of the Engineering Department of E. I. du Pont de Nemours and Company, Wilmington, Del. No details are available as these notes are being prepared. Joe was born at Ames, Iowa, on August 14, 1896, and prepared for M.I.T. at Ames High School. At Technology, he was active in the Aero Society and the Civil Engineering and Architectural Societies. He joined us in the junior year and received his degree in Course IV. Prior to World War II, he had been a consulting engineer in Baltimore, Md. A colonel in the Ninth Air Force during the war, he saw service in the European Theater. There are three grown children, James, Dodd, and Catherine. On behalf of the Class, sincere sympathy is extended to the family.

Your Secretary has moved to another location within the International Telephone and Telegraph System and is continuing in the Federal Telecommunication Laboratories organization with the practical applications of solid semiconductors, a project we had the privilege of starting just 15 years ago in introducing selenium rectifiers to this country. — CAROLE A. CLARKE, *Secretary*, Federal Telecommunication Laboratories, Inc., 500 Washington Avenue, Nutley 10, N.J.

## • 1922 •

In accord with the resolution passed at the class meeting at the Sheldon House, Pine Orchard, Conn., last June, our treasurer, Ev Vilett, has forwarded to the Alumni Fund \$500.00 as a gift of the Class of 1922. Further word from the treasurer indicates that the reunion operated at a small profit and we have on hand a substantial balance which should

be adequate to meet our expenses over the next five years and to launch our 35th reunion.

News of the Class has been very sketchy over the last few months. Our most newsworthy classmate, of course, is Crawford Greenewalt, President of Du Pont. Scarcely a month goes by without a new award or honor to him from an educational institution or a learned society, or the appearance of his picture on the cover of some important magazine. Let the good news continue.

C. Rogers McCullough, who has been director of Monsanto's atomic electric project since June, 1951, returned last November to the General Development and Patent Department of his company. Oscar Horovitz' fame as a maker of amateur movies has now become international. Last fall his film *Ice Follies* was adjudged by the Italian Olympic Committee as the best in the 8th International Competition of Sports Films for amateur photographers.

Leonard Laird's daughter, Harriet Harris, was married in December to John Byram Shirley of Berkeley, Calif.

Enough items of interest must be happening all the time to our classmates to provide your Secretary with adequate material every month. Why not sit down now and dash off a letter, giving fact or fiction as you please. Just to get in a few things based on personal observation which may or may not be of interest, your Secretary can report the following: John Goodnow still commutes from Greenbush to Boston. Bill Rich is reported to have retired. Chuck Brokaw is again a proud father, a son having been born last Christmas or thereabouts. Bob Brown, Parke Appel, and Fred Dillon have appeared at recent meetings of the M.I.T. Boston Luncheon Club. Ross Sherbrooke, also an attender of the luncheons, is chief engineer of the Quincy Market Cold Storage and Warehouse Company in Boston.

Word has recently been received of the death of James Buckelew Helme on August 27, 1952. No other information is available. The 1948 Alumni Directory states that he was at that time treasurer of Algonquin Parts, Inc., Darien, Conn. Our sympathy is extended to his widow and family.

New addresses: Russell Hopkinson, 745 Fifth Avenue, New York 22, N.Y.; Donald S. Phelps, 305 West Masonic View Avenue, Alexandria, Va.; Daniel J. Reed, 711 East Glendale Avenue, Milwaukee, Wis.; Lawrence Washington, 868 Northampton Drive, Palo Alto, Calif.; Mark W. Ellsworth, Post Office Box 95, Niles Calif.; Ole I. Vold, Kallen 5, Paradis, Fana, Norway; Donald R. Waugh, Oil Industry Information Committee, 50 West 50th St., New York 20, N.Y. — C. YARDLEY CHITTICK, *Secretary*, 41 Tremont Street, Boston 8, Mass. WHITWORTH FERGUSON, *Assistant Secretary*, 333 Ellicott Street, Buffalo 3, N.Y.

## • 1923 •

Bob Burns, in a Christmas card, tells me that he has been in Haiti for over a year in connection with a \$30,000,000 river valley project for the Haitian Gov-

ernment. He describes the works as consisting of a 200-foot dam and powerhouse, various phases of flood control and drainage, and the irrigation of 80,000 acres. It is expected to take about six years to complete the development. Bob's address is Box 1318, Port-au-Prince, Haiti. Bob also says he has had a card from Art Stuckey in Trail, British Columbia, where he is working on a large hydroelectric project for Stone and Webster.

I am beginning to get returns from a second mailing, reminding the members of the Class about the date of the 30th reunion, June 11-14, 1953. The place is the Sheldon House at Pine Orchard, Conn., which is near New Haven. Channing P. Clapp of 210 Main Street, Matawan, N.J., is chairman of the Reunion Committee. Keep the Secretary informed of your address if you want to get the final mailing for the reunion. This final mailing will provide a form on which to make reservations. Reservations are going to be very important this year. We have facilities which we think will be adequate to take care of the number of people coming, but there is not very much leeway. To get accommodations you wish, reservations should be sent in promptly when you get the reservation mailing.

The reunion mailings always turn up some additional intelligence on the whereabouts of members of the Class. Fred Chirgwin, who formerly had a mail address in Los Angeles, reports he is living at Edgartown, Martha's Vineyard, having retired from contracting and consulting work in industrial air conditioning, mostly on the West Coast.

Pete V. Martin is vice-president and management representative, at Santiago, of the Chile Steel Plant of Koppers Company, Inc. He writes that he expects to be coming to the United States, by way of Europe, a little before the dates of the reunion and hopes that it will work out so that he can get in at least a few days.

Not all of the returns are pleasant. Word came from Dedham, Mass., that Paul Adams passed away on March 9, 1952. Miss R. M. Karapetoff Cobb lost her husband, Dr. Vladimir Karapetoff, last year. She reports that she was reminded of the fact that the Class of 1923 was the first of the M.I.T. classes to wear academic gowns at graduation. Apparently what brought the matter to her mind was that she had thoughtfully made a present of her husband's doctor's gown to the pastor of her church. Dr. Karapetoff was an electrical engineer and consultant, who for 35 years taught at Cornell University. Miss Cobb lives in Winthrop, Mass., received her master's at M.I.T., and is technical adviser to the Lowe Paper Company of Richfield, N.J.

Prof. Milton E. Parker of the Illinois Institute of Technology of Chicago is a coauthor of a newly published textbook, *Elements of Food Engineering*. The 386-page volume is announced by Reinhold Publishing Corporation, New York, as the first of a series of three volumes which will be written by Professor Parker and two other members of the staff of the food engineering course at Illinois Tech. The first volume is concerned with the engi-



neering factors involved in food processing.

Albert S. Redway is president of the American Paper Goods Company, Kensington, Conn., and was elected, in December, as first vice-president of the Manufacturers Association of Connecticut. The American Institute of Architects announced, in December, the appointment of a 100-member commission which is to advise the United Nations' Educational and Scientific Committee on policy matters. Walter T. Rolfe, of the architectural firm of Golemon and Rolfe, of Houston and Beaumont, Texas, in conformance with this appointment has been officially named by the Department of State to the United States Commission for UNESCO. Rolfe is the only American architect on the Commission.

Clarke C. Miller has been appointed information co-ordinator at the Standard Oil Company's Whiting, Ind., research laboratories. The new assignment apparently covers co-ordination of related activities between company and co-operating laboratories, as Miller has been in charge of technical information activities at Whiting since 1945. — HORATIO L. BOND, *Secretary*, National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass. HOWARD F. RUSSELL, *Assistant Secretary*, Improved Risk Mutuals, South Broadway, White Plains, N.Y.

## • 1924 •

A bit late to be talking about Christmas, but we got so many interesting cards that we can't let them pass without mention. From Ed Winger, the "Season's Greetings from St. Nicholson." First time we've ever heard of a silo outfit being raised to that exalted status. His company, you will remember, is the Nicholson Company. Frank Shaw came through with one of Rustcraft's best, depicting a beautiful winter scene of snow-covered trees and mountains. Frank notes: "This is where we should hold our 30th." Since the location is not given, the significance is not quite clear. Maybe the snow is intended to complement Pret Littlefield's product which went so well at our last reunion. By the way, that 30th is coming closer every day.

By far the most informative greeting came from Sam Shulits. Sam came back from Germany with a brand new wife, Taudi, who became a citizen in time to vote in November. Her mother has now joined them and their son in Michigan where Sam is on the faculty of Michigan College of Mining and Technology. He is completing his thesis on river engineering, and hopes to get his master's in June. A treeful of cardinals arrived from Nutley, N.J. Paul had hoped to make that Mexican fiesta this year but now finds himself scheduled for a West Coast trip at that time. And if you don't think Paul merits the "migratory cardinal" designation, take a look at his further itinerary: New Orleans, Cuba, West Virginia, and Switzerland. Good thing that this continual traveling didn't come earlier in life — he probably wouldn't have earned the title of Father of the Class.

From the Clarence M. Cornishes, a beautiful fiesta-like card very much in

keeping with the great job of publicity he and Jack Nevin did on their big M.I.T. Club Fiesta. Although the affair is still a couple of weeks off as these notes are written, the count of Alumni going down from the United States is already well over a hundred.

The Robinsons of Shaker Heights sent a card showing young Ginny peering up the chimney. A follow-up letter from Bill says that her nickname of "Dynamite" is no exaggeration. Bill started off the new year right by sending along a few additions to this column, a worthy, if belated, New Year's resolution some of the rest of you might make. Seems that Barnacle Bill Simonds has completed his tour with the dry-land Navy and is going down to the sea in ships again. He stopped overnight with the Robinsons on his way back to the Coast. He paid for his keep by regaling the family with rare old sea chanteys played on the accordion, his constant companion on the briny deep. A recent visitor to Nela Park was Lee Franke, Rochester Electric's lighting expert. Lee has acquired some wooded land outside Rochester where he has a side line of growing Christmas trees. Says he gets better returns from that than the stock market. At one of Bill's recent speaking engagements in Buffalo, he was bracketed on the program with Les Twichell, another Rochester Electric man. Les has recently been made assistant manager of the company's commercial and industrial sales. There was no indication of what he talked about, but Bill seemed much impressed by the fact that Les still had all his hair!

Frank O'Neil is now a father-in-law. His son, Frank, Jr., who graduated from the Institute last June, was married on November 15 in Toledo where he is stationed at the Rossford Ordnance Depot. Lieutenant Colonel Hugh L. Walker has once again reverted to civilian status. After being pulled back to help run the big Stewart Air Base in New York, he is more than pleased at his latest promotion to Mr. We've received notice of a couple of rather drastic address changes, but as yet have no further information for you. Carlo Vicario, long a New Yorker (and the former mayor of Saddle Rock) is now in Rome, Italy. And Franklin O. Billings, late of Maryland, is now back on the West Coast, Spokane, Wash.

Unfortunately another death to report this month. Mary E. Proctor of Malden, Mass., died last April. Miss Proctor was a special student. A former teacher, she retired many years ago.

The end of December showed we were doing quite all right for Frank Shaw and the Alumni Fund. By that time, 173 of us had contributed, almost 50 per cent better than a year ago at the same time. The amount, although somewhat less than the previous year, was still good, a little over \$3,100. Still lots of time left, of course, to reach that splendid \$5,000 total we gave in 1952. You have already given (since you're reading these notes), but you can always help still more with a good word in the right place. — HENRY B. KANE, *General Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

## • 1925 •

Within the past few weeks, good news has come from George B. Blonsky, III, who, after many years of prospecting on the side while carrying on a full-time job, has shaken the dust of the Los Angeles area from his boots and set himself up at his own mine near Kingman, Ariz. He has been endeavoring for the past two years to get a tungsten mine in that area into operation and has finally succeeded. The news from him is sketchy, but he has a 15-man crew already working and has great confidence that he has a good project under way. We wish him the best of luck.

It is a real pleasure to offer congratulations to one of our Navy affiliates; namely, Rear Admiral T. C. Lonnquest, who got his master's degree with us at the Institute. Admiral Lonnquest is chief of the Bureau of Aeronautics and a native of Lynn, Mass., and in October, 1952, became the first recipient of the Distinguished Citizens Award, given yearly to a Lynn man who has made outstanding contributions on the national scene. He was educated in the Lynn schools, graduated Phi Beta Kappa from Dartmouth, and, during World War I, was attached to the Naval Air Station. He was one of the first officers to receive designations as a naval aviator for both dirigibles and airplanes. In 1922 he was ordered to the Post Graduate School at Annapolis, and then entered M.I.T. where he received the master of science degree.

After continuous sea duty from 1925 to 1927, he returned to the United States to the Bureau of Aeronautics in charge of instrument and propeller development and was responsible for the Navy's program to develop flight instruments. In 1930 he returned to sea duty as executive officer of Torpedo Squadron 2 based on the *Saratoga*, flagship of the battle fleet.

In 1932 he returned to Washington, D.C., where he pioneered in the Navy's program to perfect two-row radial aircraft engine and the mechanically driven multi-stage supercharger. From 1937 to 1940 he had duty at Norfolk, Va., and in 1941 returned to the Bureau of Aeronautics to serve as director of engineering. Rear Admiral Lonnquest served through World War II as director of engineering including service in the Pacific area. He was responsible for the design and development of the Navy's wartime aircraft and airborne equipment and was instrumental in the revolutionary advances which have made the United States the greatest naval power in the world.

We have received recent word from the son of Lieutenant Robert Morgan, XIII-A, stating that his father has passed away, no date being given. We extend class sympathy to the family of Lieutenant Morgan, whose last address indicated that he was located near Union, Wash.

I expect that many of the Class get into the news from time to time, although we sometimes have to watch very carefully to pick up such items.

Possibly many of you noted a picture of Karl van Tassel, VI, in a recent issue of *Life* magazine. Karl is active in the General Electric nuclear power developments

at the Knolls Laboratory in Schenectady, N.Y. — F. LEROY FOSTER, *Secretary*, Room 5-105, M.I.T., Cambridge, Mass.

## • 1926 •

This mid-January morning is ideal for writing notes, for the weather here at Pigeon Cove is, to say the least, confining. A sou'easter is pelting rain against the seaside of the house which is always a welcome sound in midwinter since it means no shoveling and no chains for the car. Your Secretary tries to keep a reservoir or "tank" full of class notes material and for the past two hours we have been stirring up this tank. Sometimes the stories we come across are six months or more old, but when one has not heard about a classmate in 25 years these stories are still news. We mention this in case we tell something that happened to *you* quite a while ago so that you may be assured that it is still news to the '26 gang.

For example, a story was published in the Boston *Globe* about Stewart Perry a year ago, outlining his activities as a radio amateur. Stew is a real "ham" and there must be some other classmate, perhaps at a great distance, who plies the same hobby. If so, we hope that he will get in touch with Stew over the air waves by calling W1BB in Winthrop, Mass. Stew has an extremely commercial-looking outfit and he is able to reach amateurs all over the world. In addition, his automobile is fully equipped for world-wide communication. As we review the article, we wonder if there is any way we can use Stew's hobby to round up the Class of '26.

I think I'll give Stew a ring tonight and ask if the rules will allow him to send a message to some amateur in Calcutta to pass along to Bill Rivers. The message is perhaps unofficial enough to get by — I want to tell Bill that on January 15 I received the Christmas card he mailed to me on November 15 and to wish him a happy New Year. I'll let you know how we make out.

The remoteness of the architectural school during our years at the Institute prevented the rest of us from making the acquaintance of many Course IV men. Since graduation we have had better opportunities to become acquainted but in many instances when a clipping comes in about an architect we find it necessary to dig out the old *Technique* and look him up. We have a couple of such instances this month. Roscoe Wood burst into print recently in the Los Angeles *Building News*, which published a long write-up about an exhibition home Roscoe had designed for the Palos Verdes Peninsula. The outstanding features of the house design were the combinations of traditional and contemporary materials and ideas. The house turned out to be very unusual and we hope that one day we may see it. The '26 *Technique* tells us that Roscoe came to M.I.T. from the University of Michigan as a junior — his original home being Coldwater, Mich. The clipping tells us that after attending M.I.T., he studied architecture in Scandinavia, Europe, and South America and that he has been con-

nected with Cron and Ferguson, Cambridge, Mass.; Oscar Bach, New York; and Paul Williams, Los Angeles.

Another '26 architect who recently hit the news is James B. Powers who was named director of shops for the New York City Board of Education. Jim also is in *Technique*, and by looking him up there we find that he is a Course II man even though the clipping refers to him as an architectural engineer. One architect known to all of us is Mike Radoslovich who was at our 25th reunion. Mike had his own practice for many years and in 1938 joined New York City's Department of Borough Work, supervising the design and construction of the East River Drive and other well-known New York landmarks. Mike has been named chief architect of the Bureau of School Construction in New York City. Congratulations to all three of these architects from the Class of '26!

We haven't published any numbered biographies for a couple of months, so why not tell what a couple of our classmates are doing in this manner? No. 40 — HEMEON, WESLEY C. L. — Wes deserted New England just 10 years ago to join the staff of the Mellon Institute in Pittsburgh and recently hit the newspapers in a story about work he has been doing in the field of air pollution. Wes previous to this had always been in New England, first in the lime business, then with Dewey and Almy Chemical Company, and was industrial hygiene engineer of the Massachusetts Department of Labor and Industries until 1943. Now as a senior fellow of the Mellon Institute he is in charge of a study of the basic aspects of outdoor pollution being done by the American Iron and Steel Institute. Cases such as the Donora smog condition and pollution from coal dust and soot are Wes's specialty. This past summer he conducted a survey in New Haven by placing his complicated detection gadgets on the roofs of 20 public buildings for measurements over an extended period. Wes pointed out that in New England cities, air pollution is more of a nuisance than a health hazard and that Boston is one of the cleanest large cities in the country. (There's one kind of air pollution in Boston particularly annoying to your hay-fever suffering Secretary.) This work in which Wes is now involved sounds most interesting and it is so specialized that we read between the lines that Wes is the undisputed expert in the country, and probably in the world, in his field.

No. 41 — DU PONT, JAMES QUINN — Jim went with the Traction Company in Johnstown, Pa., as superintendent of bus maintenance, right after graduation. In 1932 he opened a commercial and industrial photographic service where he operated until 1940 when he joined the Du Pont organization. His activities in the Du Pont Company started with the construction crew, building a new cellophane plant at Clinton, Iowa, in which plant he later became project engineer until he was transferred to the Remington Arms plant at King's Mills, Ohio. During World War II, Jim worked on the atomic energy projects at the University of Chicago, Oak

Ridge, Tenn., and in the Hanford Engineer works, in the state of Washington. In 1946, Jim moved to Wilmington for the first time where he has become manager of Atlantic district of the Extension Division, E. I. du Pont de Nemours and Company, Inc. In this capacity, Jim has been doing a great deal of speedmaking and we have good evidence of this in the number of clippings we receive telling of his activities. Nonetheless, Jim has found time to be very active in civic affairs, including the Delaware Safety Council, the American Red Cross, the United Community Fund, and the United Negro College Fund. In addition, he has found time to raise a fine family: He was married in 1938 to Helen Rodgers of Johnstown, Pa., and now has four children — Helen Quinn, aged 13, Alice Deborah, aged 12, Pierre Coleman, aged 4½, and, in 1952, he had another son! The new son was named James Bidermann after Jim and Jim's brother Ernie ('27) whom many of you know.

No. 42 — RICHARDSON, ROBERT W. — We received a note from the Ethyl Corporation some time ago that Bob had been promoted to Philadelphia district manager for this company. Recalling the large number of oil refineries one sees from the train in this area, it appears that Bob has taken over the responsibility for a very important segment of Ethyl Corporation's business. We used to see quite a bit of Bob when he lived in New England but could hardly believe that he joined his present company 20 years ago. During World War II, Bob served for three years as lieutenant commander with the Navy Bureau of Ships. The Richardsons, who have two sons and two daughters, now reside at 401 Park Avenue, Swarthmore, Pa. Congratulations, Bob on your new assignment!

A brief clipping from the Rochester, N.Y., *Times-Union* tells of the election of Allen L. Cobb to the presidency of the National Fire Protection Association. Allen is director of the Safety and Fire Protection Department of Eastman Kodak Company's Kodak Park Plant. Digging out our *Technique*, we find that we recognize Allen's picture even though we haven't seen him in many years, and, on checking, find that he was a Course I man and came from South Portland, Maine. For the Class — felicitations All!

This seems to about do it for the month of March, especially since it is now mid-afternoon and the rain we spoke of is over. We still have quite a number of biographies to publish, so if you have sent yours to us and have not seen it in print, please be patient. We purposely are using no system. We merely reach into the file and pull out a couple when there is space not demanded by current news. We still want that current news, though, and hope you will keep it coming, so until April — Cheerio! — GEORGE WARREN SMITH, *General Secretary*, E. I. du Pont de Nemours and Company, Inc., Room 1420, 140 Federal Street, Boston, Mass.

## • 1927 •

We are very happy to announce that Paul C. Eaton has been appointed dean



of students of the California Institute of Technology, where he has been associate dean since 1948.

Charles L. MacLauchlin, formerly of Framingham, Mass., has recently assumed his duties as superintendent of gas operation of the New Bedford Gas Company. He was formerly associated with the Framingham division of the Worcester Gas and Light Company as plant superintendent, until his transfer in 1936 to New Bedford. Since then he has served as gas engineer until 1939, superintendent of gas distribution until 1944, and superintendent of gas production for the past eight years. He has two sons: Bob, a junior at the University of Massachusetts, and Jimmie, who will enter junior high school next year.

J. Robert Bonnar, who is technical director of General Dyestuff Corporation, was elected president of the American Association of Textile Chemists and Colorists in a record letter ballot of association members. At the request of the Research and Development Division, Office of the Quartermaster General, he is heading a committee, yet to be fully formed, designed to set up specific dye formulas for wool-type fabrics. — JOSEPH S. HARRIS, *General Secretary*, Aviation Department, Shell Oil Company, 50 West 50th Street, New York 20, N.Y.

## • 1932 •

This writing in early January, just after the holiday season, finds some notes of interest. Al Dietz, Professor of Structural Engineering in the Department of Building Engineering and Construction, has been appointed chairman of the Committee on Education of the Society of the Plastics Industry. Al has been advising the dean of the Lowell Textile Institute on setting up the school's curriculum in plastics, which is designed to provide one of the first well-rounded trainings in the complete art of plastic materials. Al has been a busy fellow since our college days. He stayed on to get a doctor's degree; married Ruth Avery in 1936; was a field service consultant, Office of Scientific Research and Development, during the war; had an interesting time on a mission to Japan last summer, studying engineering education there at the request of SCAP, with three other M.I.T. professors; and is a member of the Massachusetts Governor's Council on Structural Defense. The Dietzes live at 19 Cambridge Street, Winchester, Mass., but Al lists his mailing address as M.I.T., Room 5-209.

Ted Heim, whom we remember as general manager of *Technique*, has been doing fine work with Lambert Pharmacal Company, best known for the manufacture of Listerine, and is now vice-president there. He lives with his wife, Barbara Eville, whom he married in 1941, at 7511 Westmoreland, Clayton, Mo. They have one daughter, Beverly, three and one-half. Your Secretary is rather envious of Ted living in Clayton, for as much as I have enjoyed Detroit, I am still a great booster for my Missouri homeland. Ted reports he plays golf, so we will look for him in 1957.

Another golfer and former general manager (*Voo Doo*), Jim Harper — Lieutenant Colonel James E. Harper, Jr., to his Army rank and file — has found his way to Fort Worden, Wash. He has served on the general staff of the Army in the Pentagon. As a true Texan, he lists his home address as 828 Cambridge Oval, San Antonio 9, Texas, where he is a member of the San Antonio German Club and Order of the Alamo.

Addison Ellis, Vice-president of Smith, Kline and French Laboratories in Philadelphia, continues his progress with this fine pharmaceutical firm by becoming a member of the Board of Directors. Ad has been vice-president in charge of administration, having joined the company in 1936 as office manager. Good work, Ad!

Harry B. Green is one to be envied. He is treasurer of the Fox Intermountain Amusement Corporation, motion picture theater operation, and lives in Denver, Colo., where it is no trouble at all to get to a fine fly-fishing stream. Harry is one of us who took the Katherine Gibbs route to matrimony, marrying Mabel Hendrickson in 1933. They have three children: Janet, 14, Harry, 12, and Garrett, 6.

Francis T. Gowen is a senior factory engineer for the Raytheon Manufacturing Company in Newton, Mass., makers of electron tubes. Frank got a law degree from Northeastern University Law School; married Gertrude Dyer, a Simmons girl, in 1936; and has four children: Helen, nine, Philip, seven, Nancy, five, and Bruce, three. Frank leads a busy life with a number of hobbies and activities in church and school, even achieving the august rank of deacon in the Newton Highlands Congregational Church.

Gil Tyler has been made safety director of the Ford Instrument Company, 31-10 Thomson Avenue, Long Island City 1, N.Y. Gil was formerly superintendent of the Safety Engineering Division of the National Surety Corporation, and before that worked in the same capacity for the Atlantic Division of Pan American World Airways. He is active in the National Safety Council, the American Society of Safety Engineers, and other professional societies. Since his graduation, Gil has devoted his business life to industrial safety and has been a contributor to national safety publications.

Bob Billings has been making quite a name for himself with Du Pont. He must have started with them shortly after graduation, for almost 20 years he has been in the Polychemicals Department of the Du Pont plant at Arlington, N.J., where he became technical superintendent. He has just been made special assistant to the manager of all the Du Pont technical sections, with headquarters in Wilmington, Del., where he apparently will have much to do with technical recruiting. Bob married Hazel M. Stimets in 1935. His hobbies are collecting stamps and pursuing his interests in field, stream, and forest. — ROBERT B. SEMPLE, *Secretary*, Box 111, Wyandotte, Mich. *Assistant Secretaries*: WILLIAM H. BARKER, 45 Merideth Drive, Cranston, R.I., ROLF ELIASSEN, Room 1 — 153, M.I.T., Cambridge 39, Mass.

## • 1938 •

As June approaches, more of our news items will undoubtedly revolve about the coming reunion. As of December 9, there were 31 men signed up and there are many more by now. A brief news item announces that Leroy Hammond has been appointed chief of the warehouse section, iron and steel branch of the Office of Price Stabilization, Washington, D.C. He has been manager of tube sales, Peter A. Frasse and Company, Inc., Philadelphia, Pa., since 1941.

Jack Phillips, who operates the Phillips, Scientific Corporation in Cambridge, has announced a new product — a chromatographic analyzer. This is the first of its kind. It was just announced December 26 at the St. Louis meeting of the American Association for the Advancement of Science. In St. Louis, Jack was on a daytime radio interview on chromatography, which at least four persons heard.

Herb Wiley writes: "First of all, if business conditions permit I fully intend to be on deck for the reunion next June. Being tucked away out here on the West Coast, I've lost track of most of the gang in good old '38, except for dyed-in-the-wool travelers like yourself [Don Severance] and Al Wilson. Certainly was grand to have a chance to see you both this past summer. Now that you know the way, hope you can get out this way more frequently. There isn't much news on the front at this juncture. We are in the middle of our wet season and at present I'm doing some very practical homework along the lines of drainage and soil conservation. If you need any pointers in laying four-inch drain tile lines, just let me know. My big project this fall has been a rumpus room addition to the garage. 'Tis now just about finished except for some minor electrical work and shelves for the built-ins. Have also made provisions in the addition for a home workshop, but thus far that hasn't carried the same priority as the rumpus deal so it isn't very far along as yet.

"Let's hope our 15th reunion is an even bigger success than the 10th. It should be if everybody gets on the ball and really pushes it. Edie and the girls join me in extending the season's greetings to you and all the gang as well as best wishes for a prosperous and happy 1953."

We have a stack of return cards to Don Severance which we will quote in the same manner as last month. Izzy Schwartz: "My wife and I will see you at the 15th reunion. We are proud parents of three children, one boy and two girls. I am still working in my father's store, that is mainly appliances, heating, and hardware associated with the lumber yard." Dave Wright: "Reply delayed to await news which arrived 12/17/52 — a daughter, Evelyn, to run competition with our two and one-half year old son. A strong possibility of a European trip prevents certain commitment for the reunion. Have bought a house near Larchmont, N.Y., and we are gradually getting settled in the 'country.'" Arch Copeland: "Congratulations on your efforts to make the 15th reunion a success. We have recently

been involved in the real estate business, selling our place and buying a larger place on 1020 Chesterfield, Birmingham, Mich. Still plugging away at Revere." Harold Strauss: "Yes, we expect to attend the 15th this coming year. Send me the dope so I can make definite plans. Was back East the last two weeks but did not get a chance to get to Cambridge. Spoke to Fred Kolb in Rochester, saw Howard Lawrence at RCA, Camden, and Leon Baral in Baltimore. The trip was such a rush that there was little time to really talk to anyone. Other than that there is little change since I saw you out here last January. We moved into a new home last month and that keeps us all very busy."

Betty Weir: "Do you mind a few notes from Mrs. Don? Life in California is full. Don has his own business (commercial and retail photographic supplies), four children, from nine to two (two boys and two girls), and a house in the Hollywood Hills complete with pool. Al and Carol Wilson visited us last May and stayed in our small guest house. Guess that brings us up to date!" Andy Stergion: "Child No. 4 arrived 9/19/52 — a boy, making it two boys and two girls. Still connected with Corning Glass Works as manager of quality control for their Electrical Products Division. Work very interesting. Am planning to make the reunion, but will not know until later on in the spring."

John Petroskas: "Perhaps I ought to mention my high school ambition: 'to swear and be a farmer.' The first, as you see, was attained by being a chief metallurgist at the Midvale Company, Philadelphia; the second by digging holes for my wife's prize flowers. The Petroskas now are a family of five: Suzie is five, Jack, Jr., six, Betsy, eight. My wife gave up bacteriology to cook; now she's capable of keeping us all happy. After all, cooking media for bacteria takes experience and culture (Wellesley S.M., '43). Family activities: work, A.S.M., A.I.M.E., A.D.A., Franklin Institute and Community." Dave Sargent: "I'm back in the Navy (lieutenant commander), involuntarily, at the Charleston Naval Shipyard as assistant electronics officer for shore stations, with technical responsibility for all shore electronics work in the 6th Naval District. I get to Norfolk, Key West, and the Ole Mississippi River, but I'm afraid Boston is off the track for me, even in June."

Frank Gardner: "Eleanor and I most certainly will be at Lenox in June. Lenox is just a stone's throw from Pittsfield. Eleanor won't be detained as at the 10th. Since the first of the year, have been supervising metallurgist in magnetics here in the General Electric Laboratories. We now have four boys, Dick, Jim, Dave, and Tom, 10, 8, 4½, and 1½, respectively. We took the two oldest camping in Maine last summer." Dick Muther: "Now consulting management engineer with the Vendo Company of Kansas City. Vendo is perhaps best known for its line of soft-drink dispensing machines. Have been involved in everything from union negotiations to training management personnel in advanced industrial engineering techniques. It's a great life and we like K.C. very much."

Demp Christenson: "Occupation — sales manager of Sioux Falls Book and Stationery Company. Sell school and office supplies. Seldom use a slide rule but interesting work and keeps wolf from door. Family — wife, Army nurse met while in Texas; three girls and one boy, all under six years. Hobbies — hunting in season and kids rest of time." Oliver Kangas: "I am still with the Standard Oil Development Company, located at the Esso Research Center in Linden, N.J. In my current assignment I'm in charge of the engineering, mechanical, and business activities of the Research Division. My daughter Irene is now 11 years old and my son Norman is seven. After the war when I was discharged from the Army, I had a home built in South Plains, N.J., and I am still a solid citizen in that community. As I look out of my office window across the court I see two other of our classmates — Charles Jahnig and Arnold Kaulakis — who are with the Development Division."

Vernon Lippitt: "My work in analysis and forecasting of national business conditions continues interesting and hazardous. Home life continues lively, with John just past one and Linda at three and one-half. We drove through Cambridge last summer on our way to Cape Cod but didn't have time to stop in. You must be plenty busy with the increase in students. We'll probably see you some time next year. Classmates Ray Popkin and Martin Cines visited us this past year."

Ray Popkin: "Just returned from six weeks vacation, the first in three and one-half years. Have spent most of my waking moments running a company (as president and chief engineer) devoted to the manufacture of special TV equipment, especially concentrated on all phases of color television. Now have a daughter three and one-quarter years old. Absolutely will be present at Curtis Hotel reunion." Mead Bradner: Hope to be able to arrange for the reunion but don't know yet. My news isn't spectacular. Present status is head of development engineering at Foxboro Company, chairman of Republican Town Committee, a director of local Red Cross, ditto Community Chest, and presently am digging hard to make an adequate Christmas for the wife and six youngsters (oldest is eight years)." Rafael Sanchez: "Don't have very much to say about me except that I have by now reached the age where I have to use bifocals. Regarding my attendance to our 15th reunion, I promise that I do my best to be there. Maybe I can take my son Alberto along. We discussed his possibility of attending M.I.T. for an architect's degree, but he is not so sure yet."

Louis DuBois: "I am living in St. Louis and working at Forshaw, Inc. (wholesale supply, building materials, and heating equipment), as secretary-treasurer. Have four children. Moved to St. Louis from Chicago (four years ago), where I was with Dewey & Almy Chemical Company." Bill Roper: "In March of last year I was assigned to my present job as resident engineer in charge of construction at Goose Bay, Labrador. The project, of course, is one of many air bases being built by the

Corps of Engineers for the U. S. Air Force. My family is with me here and we've been able to survive quite well in the frozen North, although we'd hardly pick it as a permanent residence. With luck, I hope to be able to sign in at the reunion in June although my visit will be necessarily brief. — ALBERT O. WILSON, JR., *General Secretary*, 24 Bennington Road, Lexington 73, Mass. *Assistant Secretaries*: DAVID E. ACKER, 210 Woburn Street, Lexington 73, Mass.; FREDERICK J. KOLB, JR., 211 Oak Ridge Drive, Rochester 12, N.Y.; RICHARD MUTHER, 116 West 67th Terrace, Kansas City, Mo.

## • 1939 •

A clipping bureau in Cleveland provided some information on Andy Fabens, Jr., II, who, when last heard from in 1939, was headed for the Harvard Graduate Business School. It appears that the Scot from Wooster finished his graduate work in 1941 and headed directly for the Army Ordnance Department where he reached the rank of captain, and from which he was separated in 1946. After leaving the Army, and through 1950, Andy was production planning manager for Buckeye Aluminum Company, Wooster, Ohio. Recently he was appointed assistant general manager of the Ramset Division of Olin Industries Inc., Cleveland, Ohio.

Other job changes that have come to our attention involve Roy Haworth who left Allegheny-Ludlum Steel, where he headed the Carbide Development Department, to become an engineering representative for Precision Welders, Detroit; Charlie Mercer shifted from Alcoa to Morgan Construction Company, Worcester, Mass., where he is sales engineer in the Bearing Department; Mike Herasimchuk has been appointed chief experimental engineer for the Bethlehem plant of Bethlehem Steel Company; Ernest O. Ohsol has joined Pittsburgh Coke and Chemical Company as director of chemical engineering; Win Reed is district manager of miscellaneous sales for General Steel Castings Corporation, Eddystone, Pa.

From time to time, the Secretaries scan the club notes to glean some information of classmates who might be active in alumni clubs throughout the country. For example, in the Northern New Jersey Club, Chet Williams and Stu Stearns are active committee chairmen; in Rochester, N.Y., Jim Bruce is active; and around the world, we find men from our Class taking their places in the administrative offices of many clubs. In Bombay, Shantaram M. Dahanukar is treasurer; in Buffalo, Vladimir Hwoschinsky '40 is president; in Manila, Ramon S. Sevilla is secretary-treasurer; at Niagara Falls, Charlie MacKinnon is president; in Philadelphia, Wiley Corl is secretary; in Seattle, Jim Barton is secretary and his assistant is Mert Woodward; in Toronto, Maxwell Coutts is president; at the University of Illinois, Dick Williams is club secretary. This sample leads us to believe that many more of the Class are participating in club affairs, and, apparently, we show our share of "school spirit."

One important birth announcement has come to our attention. Bob Touzalin, who,



three and a half short years ago, appeared at the 10th reunion as a bachelor, has announced the birth of twins bringing his total to three. It is believed that this is the third set of twins announced by the Class. Any triplets — anywhere? — *Assistant Secretaries*: GEORGE BEESLEY, 38 Homestead Road, Lynnfield Center, Mass. MICHAEL V. HERASIMCHUK, Post Office Box 495, Bethlehem, Pa.

## • 1940 •

Don Monell has opened his office for the general practice of architecture and planning in Gloucester, Mass. In addition to his architectural practice, Don is co-owner, with his wife, of Swift and Monell. The latter firm are designers and manufacturers of contemporary wrought steel furniture. Norm Kridel was recently made supervisor of lighting sales for the Rochester Gas and Electric Corporation, Rochester, N.Y. Amos Shaler has been named professor and chief of the Division of Metallurgy at Pennsylvania State College. Amos Joel is the author of an article on "The Automatic Message Accounting System" in the *Bell Laboratories Record*.

If you would like a longer column, don't forget to write to Al. — ALVIN GUTTAG, *General Secretary*, 7114 Marion Lane, Bethesda 14, Md. MARSHALL D. MCCUEN, *Assistant Secretary*, Oldsmobile Division, General Motors Corporation, Lansing 21, Mich.

## • 1941 •

At last, after a long, severe dry spell, I have a couple of letters containing firsthand information. Hank Avery tells me that he and Charlie Peck are both active in the M.I.T. Club of Western Pennsylvania, Charlie being club chairman and Hank the chairman of the Program Committee. Sounds as if the organization is in good hands. Lots of luck, fellows. Hank also enclosed a copy of a report he wrote entitled "Plasticizer Volume Continues to Grow," which made interesting reading even to a duffer who doesn't know esters from oysters, so I'd like to touch here on some of the high points.

Plasticizer sales in 1951 were 210 million pounds (\$84,000,000), compared to 187 million pounds (\$65,000,000) in 1950. This increase was made in spite of shortages of raw materials, and 1952 production is estimated to be up another 20 per cent. A large part of the plasticizer output is used in making vinyl resins flexible and suitable for a wide variety of end products (for example, floor tile, embossed upholstery, garden hose, surgical tubing, and food packaging). Production of all vinyl resins amounted to less than 23 million pounds in 1941, and more than 475 million pounds in 1951, with the President's Materials Policy Commission expecting a further increase to 1200 million pounds by 1960. Plasticizers are also used as jet-engine lubricants, nonflammable hydraulic fluids, fuel additives, all-temperature greases, rocket-propellant fuels, air-filter dust-collecting mediums, and insect repellents, as well as in the production of smokeless powder.

Hank has been manager of the Plasticizer Division of the Pittsburgh Coke and Chemical Company for almost two years, and it sounds as if he's in on a good thing. If any of you are interested in more details of his report, I'm sure he'll be glad to supply them. He's in the Grant Building in Pittsburgh.

Also had a most welcome letter from Herman Affel just after I had sent in the notes for the February issue. It seems that I had confused Affel, Sr., '14, and Affel, Jr., '41. The trip to the Far East actually was made by Affel, Sr., as reported in the Class of 1914 notes in the December issue (the same issue in which I had Affel, Jr., making the trip!). The Secretary of '14 reports, along with his story on Affel, Sr., that Affel, Jr., had received a patent on an electromagnetic wave transmissive structure. Herm writes that he is a section engineer in the Government and Industrial Division of the Philco Corporation in Philadelphia, "a very fine job but not quite equivalent to being assistant vice-president of the Bell Laboratories." Thanks for the letter, Herm, and my apologies to both members of the family.

Received Christmas cards from Carl and Helen Aronsen in Brooklyn, Stan and Esther Backer in London, Bill and Dot Fox in Baltimore, and Bob and Pat Montana in Nyack, N.Y. The Aronsens and the Foxes have two children each, and, although the Montanas didn't say, I think there are at least two there.

Fellows, it's a real pleasure to have personal letters to fill in the column. The clipping service subscribed to by the Alumni Association picks up a fair amount of news for the Secretaries, but the clippings are necessarily short and impersonal. So, don't be shy. Drop me a line and bring us all up to date on your doings.

Ralph P. Baker, who received his master's degree in 1941, has been appointed purchasing agent for the Corning Glass Works, Corning, N.Y. He has been with Corning since 1946, serving at the Pressware and Charleroi plants, and as a senior sales engineer in the Electrical Products Division prior to his transfer to purchasing early in 1951.

We all extend our sympathy to Max Schweinschaut on the death of his father. Max and his father had operated their business (the M. S. Company of Attleboro, Mass., manufacturers of jewelry findings) as a partnership, so the loss will be doubly severe. — IVOR W. COLLINS, *General Secretary*, 28 Sherman Road, Greenwood, Mass. JOHAN M. ANDERSEN, *Assistant Secretary*, Saddle Hill Farm, Hopkinton, Mass.

## • 1942 •

Mail has been very sparse these last few months. We realize that it is, perhaps, a little difficult to write of the achievements that our wives and parents are quite proud of, but please don't be shy about writing not only of marriages to come, but of any new offspring from the old married folks, and certainly of promotions, citations, and publications. The more you send in, the more we publish.

News in the mail this month includes an article in the *Journal of the Optical So-*

*ciety* about Eric M. Wormser. He has recently joined the Olympic Development Company in Stamford, Conn., as manager of the Electro-Optical Engineering Department. This group designs instruments and systems for both commercial and military use, using the latest advances in the fields of optics and electronics. One of Eric's particular specialties is infrared instrumentation and the development of special thermistor infrared detectors.

Bob Jacobson writes that he has recently joined General Precision Laboratory at Westchester County Airport.

We have three promotions of classmates in the military service. Arthur R. Gralla of the Navy has been promoted to captain. Richard C. Gibson of the Army has been promoted to lieutenant colonel, and Aniceto Santos of the Navy has been promoted to commander.

The Alumni Register advises that Harry N. Blakeslee has moved to Oak Park, Ill.; Joseph C. Boltinghouse to Marion, Ohio; John B. Davidson to Toledo, Ohio; Burton S. Eddy to Chicago, Ill.; Howard M. Hoxie to Avon Lake, Ohio; Captain Alan W. Katzenstein to Mt. Vernon, N.Y.; William E. Kline to Wallingford, Conn.; Mrs. Jeanette H. Levens to Whittier, Calif.; Arthur H. Pentz to Dongan Hills, N.Y.; Howard L. Plant to Riverdale, Md.; Franklin P. Seeley to Plainville, Conn.; Louis E. Stouse, Jr., to Tulsa, Okla.; Henry M. Tonkin, Jr., to Miami, Fla.; Edward O. Vetter to Dallas, Texas; and Jack R. Williams to Paris, France. — LOUIS ROSENBLUM, *Secretary*, Polaroid Corporation, 730 Main Street, Cambridge 39, Mass.

## • 1943 •

As was so fearfully predicted in last month's class notes, the mail is starting to pour in with class dues, news, and 10th reunion interest. It all adds up to what Prexy Dick Childerhose so aptly described as "reviving the animal," and I'm sure when we reconvene at the Mayflower Hotel this June 12, the solidarity of the Class will be stronger than ever.

I received a fine letter in December, just a little too late for the February notes, from Ned Swanberg, who writes: "My story probably follows the typical pattern of most M.I.T. '43 men, but, for what it is worth, here goes. After graduation I went to Ordnance O.C.S. at Aberdeen Proving Grounds where, with other '43 men from Technology and elsewhere, I went through the 90-day treatment. When I got my commission as a second lieutenant, I took the big step and walked down the aisle with the former Ruth Mattson, Lasell '41. Skipping the war years, which were uneventful and certainly less harrowing for me than for many others, I returned to Boston in '46. After a period of job hunting and some indecision as to what I really wanted to do, I joined the investment counsel firm of Scudder, Stevens and Clark. In 1948, I was transferred to the New York office of Scudder, Stevens and Clark and have been there ever since. If any of the boys have made their first \$100,000 by now, send them around to me! We now reside in Stamford, Conn., and enjoy the country living im-

mensely. Our children, a girl and a boy, are eight and five years old respectively. Time marches on, doesn't it?

"I have very little news of other '43 men. The last I saw of most of the fellows was at the fifth reunion. Two fraternity brothers of mine, Bob Byloff and Bill Engels, are in the metropolitan area. Bob works for R.C.A. and lives in New Canaan. Bill is in the trucking business in lower Manhattan and lives, I believe, on Long Island. If you want to capture Jim Spitz, I believe I can be of help. I have seen his dad on business calls in the past, and, if I remember correctly, he told me about a year ago that Jim was in Pensacola, Fla., with Newport Industries, Inc. I am sure you can get in touch with Jim through this company. I am looking forward to the 10th reunion. I hope we can make it an outstanding success. Please let me know if there is anything I can do which would be of help to you or the rest of the committee."

In January the mail started to pick up; here's a letter from Ed Lord: "Have been intending to answer your letter for the last week, but between New Year, Christmas, and everything else, have not got around to it. To make up for this, I will try to give a complete outline of my doings since I left Tech."

"Along with most of the other fellows, I went directly into the service, and was lucky enough to get into the Submarine Corps of the Navy, after going through officers' training and radar training, which, by the way, took me back to M.I.T. The next 18 months or so I spent on the U.S.S. *Redfish* or the U.S.S. *Crevalle*. The *Redfish* gave us lots of excitement and we had good hunting; on the *Crevalle*, however, it was more of a waiting game than anything else, since we were mapping mine fields and going into the Japanese Sea to knock off small sampans. By the way, before I left for overseas, I got married to my fiancée of college years, Hilda Stamp."

"When I returned from the Pacific in November of 1945, I decided that a rest would do me more good than anything, and thus rested for the next five months. I then got a position as an industrial engineer with a southern textile firm, in which I did time study, job analysis, payroll, and so on. However, we did not particularly like the South and thus, on inquiries received from Technology, I was able to obtain a position with Alfred Hale Rubber Company in North Quincy, Mass. Here I had the pleasure of doing industrial engineering, maintenance engineering, and cost work, as well as pricing off their different products."

"While up in North Quincy, my wife had our first child, whom we called Susan Jean Lord. However, certain complications set in afterward, and it was necessary for us to leave the Boston vicinity to get closer to my folks and my wife's folks so that we could receive the necessary nursing help to bring my wife to the best of health. Therefore I moved down here, and after a while got a position as industrial engineer at the U.S. Rubber Company, Providence plant. This was interesting work in that it was planning as well as doing time study and payroll work."

However, a chance for advancement came up in the Production Control Department and I was asked to accept it. I did this some three years ago and have been working in Production Control ever since. At the present time, I am a section head of this department, and have the very interesting job of installing a completely new production control setup. I should add here that we were lucky enough to have another child in the year 1950, and this time it was a boy named Bradley Edwin Lord. Thus with our little family, we finally decided to invest in our own home, which we now have at 21 Missouri Drive, Warwick, R.I.

"I think that, in general, gives my activity since I left Tech. There are certain side issues, however, such as my attending night law school at Boston College for one year, and taking Professor Goodwin's time and motion study night course when I was up in Boston. However, I have had little or no contacts with any of my fellow Alumni, and am hoping to get up to the class reunion this spring. In my present work I cannot guarantee anything along that line. Hoping to see you at the class reunion."

Dick Childerhose received the following notes from classmates recently, which he passed along to me. Bill Terry was two years with Canadair, one year in real estate work, two years with Grumman Aircraft, and is now completing his second year at Petro-Chem Development Company in New York City. He says he works for Pete Wiesenthal and sees Jack Thoerle, Bill Cochran, and Corky Meyer, frequently, all '43 classmates.

Morton F. Spears is a lieutenant commander, USNR, and was recalled to active duty in April, 1951. He is serving as atomic defense officer on the staff of Commandant, First Naval District, and expects to be released in April, 1953. He and his wife, Dorothy, live at 122 Burgess Avenue in Westwood, Mass., and have a son, John, eight, and a daughter, Leigh, six. Jonathan H. Sprague, Jr., has lived at 10 Mitchell Place in New York City since early last summer when he joined the Freeport Sulphur Company to work in their Market Research Department. He mentioned that he likes his work and the company very much, is still single, and hopes to be at the reunion. Earl Bimson has nothing much to report, he says, except one girl and two boys. He also mentions that he received a little help from his wife, Betty. He works for Valley National Bank in Phoenix, Ariz., as assistant auditor and is responsible for operations control, and on the side dabbles in personnel-policy stuff (not hiring and firing).

Gerry Shuchter is a major in the Marine Corps and is flying helicopters in Korea. His wife, the former Jessie Wallace, replied for him, enclosed a dues check, and reported that they have a son, Michael, aged six and one-half. She also mentioned that they have kicked around the globe together as far as China, and hopes there will be more of the same in the near future, as she expects Gerry will be home in May. Their home is at 111 Via Dijon, Lido Isle, Newport Beach, Calif.

Also forwarded from Dick Childerhose was a "Brief History Since Graduation,"

written by Don Stevens, Jr. Don was in the Navy from graduation until May, 1946. He went to indoctrination school at Ft. Schuyler and radar school at M.I.T. Then he was with Argus Unit No. 16 at Tarawa, "supposedly for air raid warning and fighter direction." Then Don did three war patrols as radar officer on the submarines U.S.S. *Blenny* and U.S.S. *Roton*. In July, 1949, he was married to the former Jean Lambert, Wellesley '49, and they have one son, Donald, born in December, 1951. They live at 294 North Maple Avenue, in Kingston, Pa. Don wrote: "It seems we've done nothing but move since we were married. We've already bought and sold two homes and are looking for a third." Don was with the J. A. Roebling's Sons Company at Trenton, N.J. as assistant plant engineer for the Electrical Wire Division, and later was an electrical wire and cable engineer there. At present he is at the Hazard Insulated Wire Works, a division of the Okonite Company, located in Wilkes-Barre, Pa.

And in today's mail, just under the wire for this issue of the notes, was a welcome letter from my former roommate, Paul A. Ambro, who works at Grumman Aircraft, and lives in Centerport, Long Island, N.Y. Paul writes: "I've been at Grumman almost 10 years now; came here as soon as we graduated, as you know, and am still working in the Stress Department. My wife, Jane, and I now have two kids—Donald, six years old, and Patty, three and a half years old. As for the pure gossip items, we can dispense with those briefly since there are only a few of our classmates here at Grumman. Corky Meyer is the sensation of Grumman. He is our top test pilot and flies all the latest experimental models. Right now he is out at Edwards Air Force Base in California, flying Grumman's latest fighter. He's married and has three children—two boys and a girl."

"Bill Cochran has been with Grumman for about five years now, and is also a test pilot. He was married a short time ago to a girl who also works here at Grumman."

That's about all the news for this issue, fellows. I certainly appreciate the wonderful response to the pleas for more news. I'm sorry that our reunion publicity gang was delayed with the first announcement in January, but by now we're catching up with the mailings. The dues reminder post card gave you Dick Childerhose's address, just in case you lost it, so send in the green stuff. — RICHARD M. FEINGOLD, Acting Secretary, 49 Pearl Street, Hartford 3, Conn.

## • 10-44 •

'Tis not true. The Class of 10-44 has not gone underground—and its officers will all sign the pledge. I can't complain of poor co-operation; the news has been accumulating nicely. Only recently I've found time and strength to compose this deathless prose. I'm stranded in my Manhattan apartment on a sleety night, with strength supplied by Old Cornhusks Bourbon.

Last fall, Dick Gascoigne, a Stevens graduate, and I started another magazine for engineers to read, *Electronic Design*.



Twenty thousand electronic designers in industry and government read this monthly, dedicated to making their jobs easier and more productive. What else could you expect from guys who have specialized in seeking the easy way?

John Hull writes: "I'm finally and actually back in this country, and have settled down in what will be my permanent job. You'll recall that I was literally shanghaied in 1946 after the Navy was through with me, for I flew to Shanghai from Guam and spent the next 18 months in China, covering a lot of ground as road transport specialist (hear, hear!) with UNRRA. On that job, while in Manchuria, I met and married Betty Baxter, an Australian employed as finance officer with UNRRA (marry the gals with money, men).

"We left China just before Christmas, 1948, came to this country for a short stay, then pushed on to Germany, where for two years I covered Germany and much of Europe as road transport specialist for IRO, another UN subsidiary. In Munich, June, 1949, John, Jr., arrived.

"In July, 1950, the three of us left IRO and Europe, setting sail from London to Australia, where I finally met my wife's family. For two years I worked as assistant design engineer for the Commonwealth Aircraft Corporation, Melbourne. Our second son, James Robert, arrived in December, 1950. In May, 1952, we sailed to London, and then to New York. My present job is manager of technical publicity for the Fischer and Porter Company, Hattboro, Pa. The company is in the process control instrument business."

Last June a few of the old guard attended Alumni Day in a practice run for our '54 reunion. King and Pat Cayce had cocktails for a few friends, including Ken Nelson, Jim and Jane Phillips, and Len and Nan Carlson. Seen in the throng that day were: Bud West, John Conroy, Harvey Travers, Melissa Wood Landing, Walter Lang, and Charlie Sollenberger.

In October, Ray Grosjean was caught carting a large supply of loot, cleverly disguised as presents, out of the General Electric Telechron plant. When pressed for an explanation, he confessed they were wedding presents to fill the bare spaces of his home-to-be. The next day he was flying to Montreal to marry one lovely Joy Nicol. On the 18th of that same month, in far off Kansas City, Kansas, Martha Ann McGee was wed to Bernard Joseph Duffy, Jr., and now they are "happy ever after" at 5621 Tahoe Lane. George Elliott Quisenberry, having attended the drinking ceremonies of the domestication of all his friends, on December 6 attended the ultimate, his own wedding to Clara Reynolds. He is earning their daily martinis selling for Package Machinery Company in New York.

Big news in Rochester on September 19 was the wedding of Janet A. Fater and Stanley Roggenburg, Jr. But, for unparalleled press, go no further than the engagement and marriage of Gay Semler to former gay-blade Albert Hildebrandt, now investment manager for Payson and Trask.

We have a scoop on the first wedding anniversaries — on April 13 for Mr. and Mrs. Theodore Fitz Randolph; and on

July 12 for Mr. and Mrs. James T. Taylor of Brookline.

Joan Simpson has been telling on her husband, Chuck: "After a two-year cruise on the 53' cutter *Tropic Bird*, Charlie returned to this country in May, 1950. The cruise was a dream-come-true that included three high school classmates — two Case Institute graduates, and an ex-Navy flier. Charlie and I were married in Lakewood, Ohio, on May 3, 1952. I graduated from Ohio University in June, 1951, and taught for a year in Lakewood.

"Our earthly possessions consist of a very nice rented apartment on the west side of Cleveland, a shiny new red Ford, two pairs of skis, and the *Holiday* — a 22½-foot Star class sailboat. We both love sailing, having met at a local yacht club in 1947, and have won several small trophies as proof of the pudding.

"At present, Charlie is sales engineer for Amco Corporation of Cleveland — distributors of petroleum handling equipment and protective coatings such as neoprene and cocoon. He's very enthusiastic about his job and probably owes some of this enthusiasm to the efforts of his boss, Robert Tisdall, an M.I.T. graduate."

The lack of philosophical and religious courses at schools like Technology has been the subject of recent discussions. Eight years after Tech, what are your thoughts about this possible need? — JAMES S. MULHOLLAND, JR., *Secretary*, 1172 77th Street, Brooklyn, N.Y.

#### • 1948 •

In another three months, we of '48 shall all be getting together back in good old Boston for our first class reunion. That seems very far from Picayune, Miss., where these notes are being written, but your Secretary is already planning for it. How about you?

In the past few months, still more of our classmates have announced their engagements and were wed. In the first category, notice has been received of the engagement of Pete Spitz, who is with the Standard Oil Company of New Jersey and who has been on an assignment at the Esso Oil Refinery in Fawley, England, to Hilda Baim. Both an engagement notice and a subsequent wedding announcement were received on the marriage of Bob Hanpeter to Charlotte Grabowski. Joe Luceri, now Lieutenant Luceri of the First Guided Missiles Group at Fort Bliss, was wed to Evangeline Saucedo; Donald Walsh to Nancy Foran; Eph Sparrow, an engineer with Raytheon in Waltham, to Ruth Saltman; Tom Cahill to Margaret O'Neill; Sam Hanna to Joan Samaha; and Bill Bangser, production engineer for H. Maimin Company, to Janet Rutstein.

And some of our men have received press notices for their activities in their respective vocational fields: Jim Protulis has been appointed technical assistant in the Polystyrene Department of the Monsanto Chemical Company's Plastics Division in Springfield, Mass. Arthur Kuljian, chief mechanical engineer for the Kuljian Corporation of Philadelphia, has been elected vice-president in charge of engineering.

Bill Levedahl, who is an automotive engineer in the U.S. Bureau of Standards,

engine fuels section, recently developed a fast acting mechanical device that takes samples of a rapidly changing gas over extremely short intervals — 0.2 milliseconds or less. "Designed for use in research on the mechanism of engine 'knock,' the new gas sampling valve is particularly well adapted to studies of the complex changes that take place in the combustion chamber of an automotive engine." Bill, after receiving his bachelor's at Tech in '48, did graduate work in mechanical engineering, photography, and thermodynamics at Eidgenossische, Technischen Hochschule, Zurich, Switzerland; advanced machine design and metallography at the University of Maryland; and work in liquid fuels and the kinetic theory of gases at the National Bureau of Standards Graduate School.

Sidney Lees is a coauthor of a new book, *Instrument Engineering*. This book, in three volumes, "presents a generalized method of attack on the problems of measurement and control. It is a comprehensive reference for the practicing engineer and a textbook of unusual completeness for students familiar with college physics and differential equations." (plug) Bill Maley has just been appointed a sales application engineer for the Reliance Electric and Engineering Company of Cleveland, in the western Connecticut area. Bill comes to New Haven from New York City, where he was a sales engineer of the company for the past two years. Douglas Hutchings, who as a civilian was employed by the Grumman Aircraft Engineering Corporation, has been promoted to corporal while serving with the U.S. forces in Trieste.

During the past month, two letters were received that your Secretaries feel can be passed along, via direct quotes. The first is from Michael Kami. He writes: "It is always a pleasure to read The Technology Review class notes and recall the familiar names but no more familiar faces. Let me furnish you the latest data about myself. On November 28, 1952, I married Kay Boehmer of Cleveland, Ohio, and we immediately rushed back to New York where we both work. On December 1, 1952, I started a new job with International Business Machines in their 'Future Demands' Department. The department writes specifications for future machines of I.B.M. and then co-operates with the engineering departments to see whether such a machine can be built. It is a fascinating work considering that we are working always eight to 10 years ahead of present methods or demands. My wife and I are living in New Jersey and are commuting every day to the city. Life is never boring and we wish there were some 29 hours in a day. Best regards to you and all 1948 classmates."

And from Ed Kratozil, now living in Waukegan, Ill., we hear: "Just a line to let you know that I have moved from the laboratory into the Chemical Sales Division of Abbott Laboratories in North Chicago. In addition to getting away from the ice cream vendor uniforms I'll be able to see a little more of the country. Might help me find 'the girl' too. Still free, white, and 21. See you next May or June."

For more news next month, remember, "It's not quite right, to be quite trite, and not write." We don't understand this either, but do write. — WILLIAM R. ZIMMERMAN, *General Secretary*, 1604 Belmar Road, Cleveland Heights 18, Ohio. RICHARD H. HARRIS, *Assistant Secretary*, Lovell Road, Holden, Mass.

## • 1949 •

I recently learned that Captain Donald Kingman was killed on August 26 in a B-29 crash near Shreveport, La. Don, who had been recalled to duty, was serving as navigator of a refueling plane. He is survived by his wife, Barbara, and son, Stephen, aged two. A second item of sad news was received from Baltimore, Md., where Anthony Bogatko, an electrical engineer with Aircraft Armaments Corporation, died on September 28.

Ivar Stockel, who is an instructor in mechanical engineering at the U.S. Naval Postgraduate School, Monterey, Calif., flew to Istanbul, Turkey, to attend the Eighth International Congress of Theoretical and Applied Mechanics. Ivar presented a paper at the conference on weight savings which may be realized by the use of tapered structural members. — One of the speakers at the September convention of the American Chemical Society at Atlantic City was Dave Kellom, who is working for his Ph.D. at the University of Illinois. — Truett Garrett, Vice-president of the Garrett Engineering Company, Houston, recently received his doctorate and discussed his thesis before the Industrial Waste Conference at Purdue.

The military inform us that Lieutenant William Mitchell and Lieutenant Robert Brown have returned to the United States for release from active duty. Bill was with the 354th Engineer Construction Battalion at Hohenfels, Germany, while Bob was with the 39th Engineer Construction Group in Karlsruhe, Germany. We also heard that Lieutenant Amos Roberts is serving in Korea with the Army's 538th Ordnance Medium Automotive Maintenance Company, and Lieutenant Colonel Roy Rayle is attending the General Staff College at Fort Leavenworth, Kansas.

Recent promotions were William Matthey to lieutenant, Robert Smith to major in the Marines, and Charles Conlon to lieutenant junior grade. Also, Fred Berg was commissioned as an ensign and is now stationed at the Naval Air Missile Test Center, Point Mugu, Calif. Fred was with the Ford Motor Company in Somerville prior to entering the service.

Jack Baker sent us a card announcing the arrival of Pamela on November 25, and Georges Diligenti welcomed a baby girl, Patricia, on December 27. I forgot to report the arrival of Peter Gaillard on July 18. You're lucky, Dave — everyone else appears to be having girls.

Ed Cluff received his Ph.D. in organic chemistry at Technology last June and has joined the Jackson Laboratory staff at Du Pont's plant in Deepwater Point, N.J. — Fred Landis joined Northrop Aircraft after serving as an assistant professor at Stanford University. Fred has been assigned to a long-term design project at Northrop. — Geoffrey Goring recently went with Standard Oil, Fred Kagan with

Upjohn, and Percy Cowley with Shell Development — all three recently completed advanced degrees at Technology.

Engagements: Lieutenant Armon Crawford to Juliet Cabaniss of Coronado, Calif. (Armon is a naval aviator attached to the *Bon Homme Richard*); Lee Eddison to Grace Gere of New York; Karl Goldberg to Beatrice Laskowitz of Brooklyn, N.Y. (Karl is with the National Mathematical Laboratory of the Bureau of Standards); Joseph Jordan to Doris Halpin of Stamford, Conn. (Joe is in the Springdale Laboratories Division of Time, Inc.); Edward Kerwin to Margaret O'Grady of Watertown, Mass.; Carl Lomison to Mary Olsen of Manasquan, N.J. (Carl was recently discharged from the service after serving three years, 16 months of which were spent in Korea with the First Cavalry Division); Herbert Riegel to Derelyn Grunauer of La Cresenta, Calif.

Weddings: William Atkinson was married to Martha Logan on August 31 in Briarcliff, N.Y. (Bill is a naval architect with the Electric Boat Company); John Behr to Aili Sundberg on August 30 in Los Angeles (John is with Lockheed Aircraft); John Bergin to Joan Hymes on September 21 in Jamaica Plain, Mass.; Frank Cole to Dorothy Ore on July 6 in Hillsboro, Ore. (Frank is an electrical engineer in the government section of General Electric at Syracuse); Dana Collier to Joan Fairbanks on July 25 in Norwich, Conn. (Dana is studying for his Ph.D. at the University of Tennessee while working for the AEC branch of Carbide at Oak Ridge); Richard Davidson to Marcella Hubbard on October 18 in Princeton, N.J.; John Delaney to Frances Gagnon on June 23 in Medford, Mass.; Brad Endicott to Birgit Carstensen on July 23 in Copenhagen, Denmark (Brad is with Sears Roebuck in Cuba); David Felbeck to Frances Myska on June 7 in Rutland, Vt.

Thomas Fell was married to Doris Rarino on April 19 in Quincy, Mass.; Walter Freeman to Maribelle Wills on September 6 in Watertown, Conn.; Joseph Harian to Mary Lupico on August 31 in Wellington, Ohio; Earl Keller to Patricia McCrann on September 7 in Boston (Earl is at M.I.T. working for his Ph.D.); Daniel Kottke to Joanne Lawrence on November 29 in Pelham Manor, N.Y. (Dan is in the industrial sales division of United States Gypsum); Harry Kouyowmjan to Madeline Dadourian on June 14 in Watertown, Mass. (Harry is a physicist for Standard Thermometer Company); Erwin Loewen to Joan Wills on September 6 in Boston, Mass. (Erwin is presently an assistant professor in Mechanical Engineering at Tech); John Lumis to Virginia Nutting on June 28 in Cliffside Park, N.J. (John is with the U.S. Metals Company of Cartaret, N.J.); Ross McKinney to Margaret Curtis on June 21 in Dallas, Texas; Leonard Meyer to Mary Bulla on August 24 in Fairfax County, Va.

John Miller was married to Munja Wisotsky on June 29 in Boston (John is with the Formica Company at Quincy); Walter Mordarski to Grace Morse on July 5 at Lynn, Mass.; Neil Morrison to Mildred Hayden on September 13 in Waltham, Mass. (Neil is an industrial engineer with the Rock of Ages Company, Barre,

Vt.); Lieutenant Charles Nichols to Martha Weeks on August 30 in Havre de Grace, Md.; Robert Nesbitt to Carolyn Klain on January 1 in West Palm Beach, Fla.; Lieutenant Albert Owens to Margaretha Dahmen on August 2 in La Jolla, Calif. (Al is stationed at the Navy Electronics Laboratory, San Diego, Calif.); John Rhodes to Jean Paterson on May 3 in Farmington, Conn. (John is with Industrial Nucleonics Corporation in Columbus, Ohio); Ray Shade to Nancy Gray on June 1 in Belmont, Mass.; Nathan Sokal to Zelda Kaufman on August 10 in Cambridge (Nat is working for the Division of Industrial Cooperation at Technology's new Lincoln Laboratory); William Tewell to Elizabeth Curtis on May 22 in New York City; Jay Whyte to Carole Leventhal on July 5 in New York City (Jay is stationed at Camp Meade). — CHARLES WILLETT HOLZWARTH, *Secretary*, 1426 Grace Avenue, San Jose 25, Calif.

## • 1951 •

Your Secretary wishes to express his deep appreciation to the many staunch '51 men who took time out to send holiday greetings and notes of their doings. May I extend a cordial invitation to all classmates — from Cambridge to Korea — to provide news and views so that we can keep this column full of class activities? And now, shifting attention to the mailbox, let's start with news of the fellows currently working fulltime for Uncle Sam.

Dick Angelillo is now in Korea. The Army reports that Dick Andelman has been transferred overseas and is now attached to the 28th Infantry Division in Bavaria, Germany. Manny Becker has joined the large group of M.I.T. men at Wright-Patterson Field in Ohio. Deane Beytes is serving in the Far Eastern theater of operations. Byron Burch received his commission in December and is currently stationed at Fort Belvoir in Virginia. Steve Chamberlin, now rounding out his seventh month with the Army in Korea, reports that activities in Korea are keeping him quite busy. Another '51 man in Korea is Frank Davis who is serving with the 45th Infantry Division; he and Steve Chamberlin are first lieutenants.

Vern Pfanku, having completed his duty assignment as an air installations officer in Korea and having received his promotional silver bar, is now happily stationed near his home town, Madison, Wis. From the reports, Vern is looking forward to enjoying the civilian comforts of stateside duty. Pete Endrei is getting additional training at the Lowry Air Force Base in Denver.

John Freitag has certainly moved about since leaving Technology; at present, John is stationed at Fort Richardson, Alaska. Bob Gooch is still working hard at Wright-Patterson. Dick Goss left the United States in October for duty in Korea. Joe Hodnick received his ensign's bars from the Navy and is now on active duty. Stan Jones is still operating in Oklahoma for the Army. Glenn Mackey is exploring the "wide open spaces" of Texas via jet flying in and around Waco, Texas. Ensign Tom Maddock has been given an overseas assignment with the Navy's Mobilization Construction Battalion



ion Nine. Ed Ostroff is working at the Air Force Cambridge Research Center.

Bob Schiesser, "having been spoiled by sunny California," is now an instructor at the Redstone Arsenal in Alabama. Bob is training men in the handling, maintenance, and field storage of guided missiles. Tom Smith, as ensign aboard the U.S.S. *Cogswell*, the DD651, is working for the Navy's Atlantic Fleet. Reynold Soukup received a promotion to colonel in December. Dick Reuther is still associated with the Army's Chemical and Radar Laboratories in Maryland. Herb Yamane is now attached to the Holloman Air Force Base in New Mexico. Dick Lock and his wife are very satisfied with Dick's present assignment at Fort Monmouth, N.J.

Now let's explore the other vital statistics areas. Armand Tanguay and his wife, Catherine, really designed a novel, and from the Course XV view, businesslike, arrangement to signal the birth of their second child, Denise Marie. In their Fourth Annual Report of the Corporation, Armand and Catherine announced their second dividend issued as a six-pound-six gold star bond which is now listed on the stork exchange as three pounds above par. They go on to add that "this dividend too is fast accumulating interest," in addition to the Secretary-Treasurer of the Corporation, brother Navy. Well done! In the engagement area, we find that John O'Donnell became engaged to Mary Joyce Feeney. And Rachel Goetchius became engaged to Robert Seller.

More developments in the marital sphere: Frank Fanelli took Valerie Way as his wife in Hartford in November. Marv Grossman and Joanne Freeman were married in December at Worcester. Tom Kelly, now serving as ensign aboard the U.S.S. *Cotten*, and Margaret McCormick said "I do" in November at Grosse Pointe, Mich. Jim Robinson and Evelyn Eigelbach walked the marital path together in December. Phil Simmons and Judith Ann White began their married life in November at Brockton. Ralph Romano and Betty Coyle exchanged marital vows in January at Pittsburgh; Ralph is still stationed at Wright-Patterson. Best wishes and good luck to all of you.

John Ishikawa joined the research division of the Polychemicals Department of Du Pont at Wilmington, Del. Keith Leibbrand is associated with the U.S. Rubber Company at their Passaic, N.J., laboratories. Jyotibhusan Malik, having received a Burmah-Shell Scholarship, left India to study advanced petroleum technology at England. Chuck MacDonald reports that he is doing estimating, cost analysis, and contract work for the J. A. Jones Construction Company at their large Radford Arsenal project in Virginia. Hank Marsh states that he is working for the Hercules Powder Company in Wilmington, Del. Hank Spaulding has returned to his former operating area in New York after a tour of duty for his construction company in Savannah, Ga. Bill Redmond is helping produce planes at Chance-Vought Aircraft in Dallas, Texas. Art Wasserman, studying at the Lincoln College at Oxford, England, reported he is concentrating on philosophy, politics, and economics.

So long, guys and gals, see you next month. — STANLEY J. MARCEWICZ, *Secretary*, Gallatin D-25, Harvard Business School, Boston 63, Mass.

## • 1952 •

LOST: one class. Sometimes known around the ivied halls of the Massachusetts Institute of Technology as the Class of 1952. Also known under other aliases, which include the Panty-Raid Boys, the Eclipse Men, and Roadblockers, Extraordinary. If anyone knows the whereabouts of the Class or of any of its members, or of their recent activities, please write without delay to Stan Buchin, 150 Tryon Avenue, Englewood, N.J. Reward offered — your name will appear in the No. 1 alumni magazine of the country covering the doings of M.I.T. men and women. For particularly meritorious service, the Royal Order of the Broken Crutch will be awarded, no questions asked.

Engagements that we read about in the first issue of these class notes, back last July ended in marriage. Back in December, Adele Heller and Howie Zasloff were married in Brooklyn, N.Y. Following a honeymoon in Florida, the couple have settled down at Princeton, where Howie is working for his master's degree in chemical engineering and is a teaching assistant on the side.

Wedding bells also rang last December for Jean Howard and Bill Morton in New Rochelle, N.Y. Bill and Jean were honeymooning while traveling to Bill's new station, Keesler Air Force Base, in Biloxi, Miss. By this time Bill and Jean should be at Sandia Air Force Base in Albuquerque, N.M. Bill, as you may have guessed, is a second lieutenant in the Air Force.

Here's a marriage that occurred last summer. In August, Sylvia Baker and Chuck Schwartz were wed in Bloomfield, Conn. They are now living in Boston while Chuck attends M.I.T. Graduate School.

Note on an engagement: Libby Agate and Burge Jamieson announced their intentions on Christmas Day in East Orange, N.J. Burge is at present working as an electrical engineer at Grumman Aircraft in Bethpage, Long Island, but service with the Ordnance Corps looms.

Letter from Doug Haven reads as follows: "I went practically from the graduation podium to Lackland Air Force Base, Texas, on a direct commission, as did Paul Lux. After Lackland, I flew home, got engaged to Sally Starck, who has recently moved from the Mathematics Department to the Music Library, and proceeded to my next duty station, Warren Air Force Base, Cheyenne, Wyo. The engagement was announced in the fall, but I don't remember the exact date. After Supply School at Wyoming, I was assigned to Cambridge, from where I was pipe-lined to Hanscom Air Force Base at Bedford as a supply officer. Bob Danforth is at Ft. Monmouth, New Jersey; Ed and Nancy Ort are at Middletown, Pa.; as are Bob and Phyl Gaudin. Bob and Phyl should have a dividend in January. Paul Lux is at Wright-Patterson in Dayton, Ohio."

Skimmed from the Department of Army, special orders: Lieutenant Jack

Casson, Corps of Engineers, from Ft. Belvoir, Virginia (the Engineer's School), to the 407th Engineer Combat Team at Ft. Campbell, Kentucky; Lieutenant Jack Copenhefer, Quartermaster Corps, from the Quartermaster Corps School, Ft. Lee, to the New York Quartermaster Petroleum Field Office, Jersey City, N.J.; Lieutenant Gerry Ellis is in the same boat as Jack Copenhefer; Lieutenant Al Geisler, Quartermaster Corps, from the Quartermaster School, Ft. Lee, to the Quartermaster Subsistence School in Chicago, Ill.; Lieutenant Arnie A. Kramer, also of the Quartermaster School and later of Ft. Dix, New Jersey, to Ft. Lewis, Washington, pending assignment overseas as a supply officer; Lieutenant Ted Maione, Signal Corps, from the Signal Corps School, Ft. Monmouth, New Jersey, to the Signal Corps Electronics Training Detachment, Ft. Aberdeen, Maryland, as a radar maintenance and repair officer; Lieutenant Ed Olney, Quartermaster Corps, of the Quartermaster School and later Ft. Devens, Massachusetts, to Ft. Lewis, pending assignment overseas as a warehouse officer; Lieutenant Gino Scalamanire, Quartermaster Corps, from Ft. Lee to Ft. Monmouth as a general supply officer; Lieutenant John Small, Corps of Engineers, from Ft. Belvoir, for assignment overseas; Lieutenant Dave Weber, Quartermaster Corps, from Fort Lee to the Quartermaster Subsistence School, Chicago, Ill.

Corrections Department: Marty Kay is not studying at Purdue University; he is doing his graduate work at the University of Connecticut. Lieutenant Al Kandel is in Rochester, N.Y., but is not assigned to an Ordnance Depot; he is doing work as a price analyst for the Rochester Ordnance District (Procurement).

Note from Jim Vaughan: "I'm out at Stanford taking premed courses, but due to a slight misfortune on a motor scooter (I broke my leg), I decided to finish out the year with the less ambitious program of taking the courses I like and going into engineering when I escape this cast. My doctor tells me that the cast will come off just at the end of the school year in June. I may be in the Army after that."

One-sentence blurbs: Lieutenant Gus Rath and Lieutenant Phil Schirm still at Wright-Patterson Air Force Base, Dayton, Ohio. Werner Kahn in Rio de Janeiro, Brazil. Ed Margulies now happily haunting Cornell Medical School and New York City after a siege in the hospital. Westinghouse shipping Lou DiBona to all kinds of schools around the countryside. Dick Heitman happily flunking Princeton undergraduates taking chemical engineering courses, while he himself is also working for his master's degree. Stan Sydney busily working for his master's degree at M.I.T.

Morals for the month: Join the M.I.T. alumni club nearest to your present location — give generously to the Alumni Fund. As you have undoubtedly found out recently, money is becoming a scarcer commodity each day, especially for educational institutions. So long until next month. Let's hear from you all. — STANLEY I. BUCHIN, *Secretary*, 150 Tryon Avenue, Englewood, N.J.

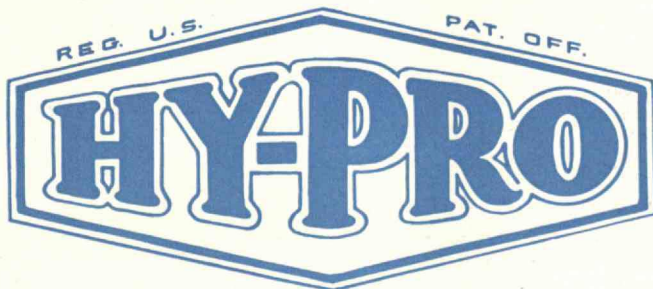
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